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The National Food and Health Book

FOOD ANALYSIS, BALANCED RATION
CONSERVATION, PRESERVATION
PREPARATION

THE NATIONAL FOOD AND HEALTH BOOK

Compiled and Arranged by

ROBERT A. HARRISON

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United States Dep't of Agric., States Relation Service,
C. F. Langworthy, Chief.

Cornell University, New York, State College of Agric.,
Albert R. Mann, Acting Dean.

University of Nebraska, Agric. Extension Dep't,
C. W. Pugsley, Director.

Perdue University, Indiana, Agric. Extension Dep't,
G. I. Christie, Superintendent.

Iowa College, Agric. Extension Dep't,
R. K. Bliss, Director.

Kansas, Agricultural Extension Service,
Edward C. Johnson, Director.

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National Warning

Herbert C. Hoover, head of Belgium Relief, after being expelled from Belgium by the Germans, spent several weeks studying the food situation in England, France and Italy. Before sailing to be President Wilson's food adviser he cabled to the American people on April twenty-first, 1917, the biggest piece of news that has come across the Atlantic since the war began. Here is what he said:

"I feel it my duty to emphasize that the food situation is one of the utmost gravity, which, unless it is solved, may possibly result in the collapse of every thing we hold dear in civilization.

"The total stock of food to-day available in the allied world is simply not sufficient to last till September if America continues its present rate of consumption. We are now face to face with the result of last year's poor harvest, the diversion of man power from agriculture all over the world, the unavailing efforts of the European women to plant available fields fully, the isolation of Russia, the sinking of food ships and many other causes.

"England, France and Italy are reducing consumption by drastic steps, but even with all this reduction they must have from us during the next three months more than twice as much food as we should have exported normally or than we can send if we consume as usual.

EAT LESS—PLANT MORE.

"The only hope of providing the deficiency is by the elimination of waste, and actual and rigorous self-sacrifice on the part of the American people. To carry the Allies over until the next harvest we must reduce our wheat consumption thirty per cent. This means that every man, woman and child must forego at least one loaf of wheat bread per week and eat something else or less generously.

"More than seventy per cent of American homes already are places of thrift, economy and a clean plate. In the remaining thirty per cent no one can deny that there is profligate extravagance and waste. Temperance in entertainment, food and drink is likely to become no longer an ethical question among this class, but a grim imposition of war.

"We must also plant everything and everywhere it will grow, or this time next year the food problem will be absolutely unsolvable and the world will face absolute starvation."

Preface

The object of this book is to supply in convenient form a condensed compilation of the scientific and reliable facts on foods and the economical uses of foods from the best sources. A comprehensive treatment of any phase of the subject of foods has not been attempted. The aim has been to provide practical material in a usable form.

Contents

Part I.—Food.

Digestion 7
Digestibility of Food 8
The Cooking of Food 8
Quality of Food 9
Public Eating Places 9
Cleanliness of Food 10
Bacteria in Food 10
Parasites in Food 10
Decomposition of Food 10
Molds on Food 10
Flies and Food 11
Dust and Food 11
Pet Animals and Food 12
Common Elements and Compounds in Food 12
Refuse in Food 13
Average Composition of Foods—Table I 14
Non-nutrients in Food 17
Nutrients in Food 17
Actual Values in Food Materials 18
Adaptation of Foods 18
Advantages of Several Meals a Day 19
A General Plan for a Day's Menu 19
Meal Planning 20
Choice of Foods for Body Needs 20
Balanced Ration 21
Rules for Planning Inexpensive Meals 22
Suggestive Menus 23
Left-over Foods and Recipes 25
Suggested Economy 29
Waste in Food Preparation 30
Waste in Eating Habits 30
Dietary Standards 30
Conservation of Foods 31
Preservation of Foods 34
Home Canning 34
Home Drying 42
Home Storage 43

Part II.—Economical Recipes

Comparative Measures and Weights 49
Bread—Demonstration—Bread Lesson 50
Soups 57
Salads 60
Meats and Meat Substitutes 63
Vegetables 67
Desserts 70
Pastry 74
Cakes and Doughnuts 75
Eggs and Milk 79
Corn and Its Uses 81
Plain Patterns in Cookery 86
Preserves, Jellies, etc 90
Sandwiches 92
Afternoon Affairs 93
The Emergency Shelf 94
The Feeding of Children 95
Recipes for Children's Food 96
Invalid Cookery 99
Cookery for Sick and Convalescent 101

Food

PART I.

Food is that which taken into the body builds tissue or yields energy.

The most healthful food is that which is best fitted to the needs of the user.

The cheapest food is that which furnishes the largest amount of nutriment at the least cost.

The best food is that which is both most healthful and cheapest.

The value of food depends mainly upon its composition and digestibility. The composition is determined by chemical analysis.

The most important kinds of compounds in foods are protein, fats, carbohydrates, mineral matter, water and refuse.

The functions of these compounds in the food are to build and repair the various tissues of the body and to supply the heat and muscular energy.

Digestion.

"We live not upon what we eat but upon what we digest." Food must first go through a number of chemical changes by what is called digestion which prepares it to be absorbed, taken into the blood and lymph and carried to the parts of the body where it is needed. Digestion takes place in the alimentary canal, partly in the stomach but more in the intestine.

Digestion is brought about by substances called ferments which are secreted by the digestive organs. Saliva in the mouth has the power of changing insoluble starches into soluble sugar, but as the food stays in the mouth only a short time, there is generally little chance for such action. Saliva, however, helps fit the food to be more easily worked on by the stomach. Gastric juice of the stomach acts upon protein, and the pancreatic juice of the intestine acts upon protein, fats and carbohydrates. The action of all the ferments is aided by the fine division of the food by chewing and by the muscular contractions of the stomach and intestine. The parts of the food which the digestive juices can not dissolve escape digestion and are periodically given off by the intestine.

When finally the blood, supplied with the nutrients of the digested food and freighted with oxygen from the lungs, is pumped from the heart all over the body it is ready to furnish the organs and tissues with the materials and energy which they need for their peculiar functions; at the same time it carries away the waste which the exercise of these functions has produced. It is a characteristic of living body tissue that it can choose the necessary materials from the blood and build them into its own structure.

Digestibility of Food.

All foods are not equally digestible with all people. Different persons are differently constituted with respect to the chemical changes which their food undergoes and the effect produced. It may be literally true that "one man's meat is another man's poison." Most wholesome kinds of food are hurtful to some people. Sickness may be nature's evidence that certain food is unfit. Every person must learn from his own experience what food agrees with him and what does not.

It has been found that in the total food of an ordinary mixed diet, on the average, about 92 per cent of the protein, 95 per cent of the fats and 97 per cent of the carbohydrates are retained by the body. The digestibility of a given article of food depends upon the digestibility of the different classes of nutrients and upon the relative proportion in which these nutrients occur. Different specimens of the same kind of food material differ in composition, digestibility and nutritive value.

The Cooking of Food.

The cooking of food has much to do with its nutritive value. Owing to mechanical conditions or other causes many articles of food which are quite unfit for nourishment when raw are very nutritious when cooked. It is a matter of common experience that a well-cooked food is wholesome and appetizing while the same material badly cooked is unpalatable. There are three chief purposes of cooking. The first is to change the mechanical condition so that the digestive juices can act upon the food more freely. Heating often changes the structure of foods very materially so that they are more easily chewed and more easily and thoroughly digested. The second is to make it more appetizing by improving the appearance or flavor, or both. Food which is attractive to the eye and taste quickens the flow of saliva and other digestive juices, and thus digestion is aided. The third is to kill by heat any disease germs, parasites or other dangerous matter, and applies to both animal and vegetable foods.

Heat properly applied to meat develops the pleasing taste and odor of extractives and softens and loosens the protein (gelatinoids) of the connective tissues and thus makes the meat more tender. Extreme heat tends to coagulate and harden the albuminoids of the lean portions and weakens the flavor of extractives. Burned meat is both unpalatable and indigestible.

Meat in cooking loses weight because of the escape of the juices, fat and water. The nutritive value of a meat soup depends upon the substances which are dissolved out of the meat, bones and gristle by the water. In ordinary meat broth the extractives and salts are agreeable and often valuable as stimulants but have little value as nutriment.

The cooking of vegetables ruptures the walls of the tiny cells containing starch grains and makes them more soluble. Heat also caramelizes a portion of the carbohydrates and produces agreeable flavors.

Foods prepared from flour are made more palatable and porous and are more easily broken up in the alimentary canal when cooked. Escaping steam, and carbon dioxide gas given off by baking powder or by the fermentation of yeast in the dough form tiny bubbles within thin walls of protein (gluten) of the flour thus assisting in the desired results from cooking. The albumen of eggs when beaten incloses air in bubbles which expand and the walls stiffen with heat and thus render the food porous. a.

a. W. O. Atwater, Ph. D.—Farmers' Bul. No. 142.
U. S. Dept. Agric.

Quality of Food.

That food which is brought into the home shall be clean and of good quality is of the greatest importance. Vegetables and fruits should be grown and milk and other dairy products produced under proper conditions, and all food materials which pass through the manufacturer's or dealer's hands should reach the kitchen in a clean and wholesome condition.

Since the passage of the National Pure Food and Drugs Act giving the United States Government authority to enforce stringent laws against adulteration and misbranding of foods which enter interstate commerce, and the more rigid enforcement of similar state laws, the matters of quality, quantity and cleanliness are generally neglected by the buying public. Deception has been greatly decreased, yet the burden of selective and discriminating buying can not be removed from the shoulders of the family buyer. Cheaper brands and grades of all food products cost less because they are either inferior, have a lower cost in production or a less demand than the higher priced products. For example: 1. The cheaper brand of canned tomatoes may contain less and greener pulp with more water than the higher priced brand. 2. The cheaper brands of coffee may not only be an inferior berry but cost less in production during the processes of roasting. 3. The quality and cost of production may be the same with a cheaper product where demand dictates the price; as is true with cracked rice compared with the whole grain or round steak as compared with more expensive cuts of meat. In many cases sanitation and service add slightly to the cost of certain types of products. The buyer needs a very discriminating and well balanced sense of true value to fully protect the health as well as the economic rights of the household.

Public Eating Places.

Legislation regarding the inspection and regulation of hotels, restaurants and other places where meals are served is in force only in certain cities. The matter is one concerning which the patronizing public has a right to full information. In general, carefully managed eating places welcome inspection of their kitchens and storerooms by visitors. Clean places should be patronized. Bakeries, markets, candy kitchens and other places where food is handled should likewise be under very careful scrutiny in all matters pertaining to the sanitary

handling of their respective products. The person who undertakes the manufacture, distribution or preparation of food needs not only a knowledge of his particular activity but a thorough understanding of all the requirements of sanitation and health in the care of food products. Remedy in cases of ignorance and neglect is in the hands of patrons.

Cleanliness of Food.

Cleanliness should always be observed in the keeping, handling and serving of food. Every precaution should be taken to insure cleanliness for the sake of health and economy. It means not only absence of visible dirt but freedom from undesirable organisms, and from worms and other parasites. If food, raw or cooked, is kept in dirty places, peddled from dirty carts, prepared in dirty rooms and in dirty dishes or is exposed to foul air, disease germs and offensive and dangerous substances can easily get in.

Bacteria in Food.

Food and drink may be very dangerous sources of disease. Bacteria of typhoid fever often find their way into drinking water, and those of typhoid and scarlet fever and diphtheria into milk, and bring sickness and death to large numbers of people. Great pains should be taken to know the sources of the food we eat and to know that the mediums through which this food has passed have been sanitary and that the necessary precauptions against the most dangerous diseases been taken.

Parasites in Food.

Food materials may also contain parasites, like tapeworms in beef, pork, and mutton, and trichina in pork, which are often injurious and sometimes deadly in their effect. The danger is not confined to animal foods. Vegetables and fruits may become contaminated with the eggs of numerous parasites from the fertilizers which have been applied to the ground in gardens and orchards. Raw vegetables and fruits should be very thoroughly washed before serving. If the food is sufficiently heated in cooking all organisms are killed.

Decomposition of Food.

Sometimes food undergoes decomposition in which injurious chemical compounds, so-called ptomaines, are formed. Poisoning by cheese, ice cream, preserved fish, canned meats and the like has been caused in this way. The ptomaines often withstand the heat of cooking and other precautions should be taken to guard against the possible use of foods in which decay has set in.

Molds of Food.

Mold on bread, cheese and other foods is familiar to every housewife. The spores (i. e. minute reproductive bodies) of the different varieties of mold are every where present and need only warmth and moisture to enable them to grow on many kinds of food. These or-

ganisms are always at work in damp cellars and in dark, damp corners of rooms. They are borne on the feet of insects, skins of fruit and are flying in the air. They flourish best in foods piled close together. To prevent them getting started absolute cleanliness is necessary. Fresh air, sunshine and whitewash are important aids. Avoid dampness. Cellars may be kept dry by providing a quantity of unslacked lime. The growth of all forms of fungi is also prevented by low temperature.

Flies and Food

The common house fly carries disease germs. It breeds in manure. It feeds on the sputum of diseased throats and lungs, typhoid dejecta, and refuse of all kinds. Germs are carried on its hairy feet and legs. By recent experiments with animals the bacilli of tuberculosis and typhoid have given the disease within fifteen days. The eggs of worms taken in with food remain alive and hatch after being ejected in the "specks." The remedy proposed is strict enforcement of the laws governing the cleaning of streets and the covering of all manure pits in town and country, with occasional spraying with crude petroleum. All means of prevention of the fly in the home should be used.

The mosquito also carries disease. Two varieties are conceded to be necessary to the transmission, respectively, of malaria and yellow fever. The micro-organism of yellow fever is taken into the body of a mosquito and after twelve days it can convey the disease by biting. This "intermediary host" is successful fought only by exterminating the breeding places and by screening the home.

The Bureau of Entomology of the Department of Agriculture has given a great deal of attention to the above subjects and the publications of the Bureau should be consulted for full data. a.

a. U. S. Dept. Agr., Farmers' Bul. 155.

Dust and Food

Dust is a little of everything. Air and dust bacteria are not necessarily harmful but may have among them those which produce disease. Dr. Michael Prudden gives the results of attempts to count the bacteria in the dust of New York streets. A culture plate of three and one-half inches in diameter was exposed for five minutes with the following results: Central Park, near street, collected 499 bacteria; Union Square, collected 214 bacteria; a large dry goods store, collected 199 bacteria; and a street while being swept collected 5,810 bacteria.

It has been found that molds, yeasts and bacteria are carried into the air by sweeping in the home. In no event should food and dishes be exposed so that the particles from the air can settle upon them. Dusting should be done with a damp cloth. A feather duster scatters micro-organisms in the air. Modern cleaning devices have a

great sanitary advantage. It is obvious that the floors of kitchen, dining room and pantry should be kept well washed.

Pet Animals and Food

The fur of even the most cleanly cats and dogs kept in the home may come in contact with the food. Of all rooms they should be kept from the kitchen.

(Mice should in no case be tolerated in the home. The chances for infection from contagious diseases are too great, to say nothing of their ravages in destruction and waste. Data summarized by the New York State board of health shows the rat to be a factor in transmitting diphtheria and other diseases. Their destructiveness is incalculable.)

Common Elements of Food.

The chemical elements which contribute in food most abundently to the body are oxygen, hydrogen, carbon, nitrogen, calcium, phosphorus and sulphur. These elements form a great variety of compounds as already stated, are: Protein, fats, carbohydrates, mineral matter, water and refuse.

Compounds in Foods

1. PROTEIN. Protein forms about 18 per cent, by weight, of the body of the average man. Protein compounds may be subdivided into albuminoids, gelatinoids and extractives.

Albuminoids include substances similar to the white of eggs, the lean of meat (myosin), the curd of milk (casein), and the gluten of wheat.

Gelatinoids occur principally in the connective tissues, such as the collagen of the tendons and skin and the ossein of bone.

Albuminoids and gelatinoids, classed together as proteids (a), are most important constituents of our food. They make the basis of bone, muscle and other tissues and are essential to the body structure. They are also used as fuel—that is, they are burned in the body to make energy and also to some extent are transformed into fat and stored in the body.

(a). The terminology here followed is that recommended by the American Association of Agricultural Colleges and Experiment Stations.

EXTRACTIVES are included with the protein compounds because they contain nitrogen, but they differ greatly from the albuminoids and gelatinoids. They are the principal ingredients of meat extracts, beef tea, etc. They chiefly act as stimulants and appetizers.

The digestion of proteins begins in the stomach and is completed in the intestine.

Examples of protein foods are: Milk, peas, beans, cheese, oatmeal, nuts, meat, fish, eggs.

2. FATS. Fats form about 15 per cent, by weight, of the body

of the average man. They occur chiefly in animal foods, such as meats, fish, butter, etc. Also they are abundant in some vegetable products, such as olives, cottonseed, some cereals, notably oatmeal and maize, and in nuts. Fat is stored under the skin and scattered in minute particles through the various tissues. It gives warmth and energy in a concentrated form. Its digestion takes place chiefly in the intestine.

Example of fat foods are: Butter, cream, egg yolks, meat fats, vegetable oils, nuts, cottonseed oil, olive oil, oat meal.

3. CARBOHYDRATES. Carbohydrates constitute only a small portion of body tissues—less than one per cent. They are found chiefly in the vegetable foods like cereal grains and potatoes; also in milk in the form of milk sugar. They are very important because they form an abundant source of energy and are easily digested. Digestion begins in the mouth with the action of saliva on starch which is changed to a more soluble substance, dextrine, after reaching the stomach. Digestion is completed in the intestine. Carbohydrates are subdivided into two classes—starches and sugars.

Examples of carbohydrate food are: STARCHES—cereals, potatoes, rice, vegetables, fruits, milk, SUGARS—Sugar, honey, molasses.

4. MINERALS. Minerals form about 5 or 6 per cent, by weight, of the body of the average man. They are found chiefly in the bones and teeth, and also found in solution in the various fluids and are in the tissues. Minerals are necessary in building the nerves and aid in producing the red corpuscles in the blood.

Sources of mineral foods are: Milk, fresh fruits, whole cereals, green vegetables, egg yolks, cod fish, salt, raisins, dates, prunes.

5. WATER. Water forms about 60 per cent, by weight, of the body of the average man. It is a component part of all the tissues. Water helps make the blood, equalizes bodily temperature, aids in moistening the joints and acts as a carrier of waste from the body. As it can not be burned it yields no heat or energy to the body.

Sources of water in food are: Beverages, fresh fruits, fresh vegetables.

Refuse in Food

Food contains some materials which we can not or do not eat. Refuse is made up of all the other compounds of food and constitutes an important item when we consider the actual cost and nutriment in food. Thus bones are largely mineral matter, with some fat and protein. Egg shells are almost all mineral matter. In some cases edible materials are classed as refuse altho they have a high nutritive value. Vegetable materials such as bran, potato and apple peelings have a number of the important ingredients of food and are generally among food wastes.

TABLE I.—Average composition of common American food products

Food materials (as purchased).	Refuse	Water	Protein	Fat	Carbohydrates	Ash	Fuel Val. per lb.
ANIMAL FOOD.	pr ct	pr ct	pr ct	pr ct	pr ct	pr ct	calories
Beef, fresh:							
Chuck ribs	16.3	52.6	15.5	15.0	.....	0.8	910
Flank	10.2	54.0	17.0	19.0	.....	.7	1,105
Loin	13.3	52.5	16.1	17.5	.....	.9	1,025
Porterhouse steak	12.7	52.4	19.1	17.9	.....	.8	1,100
Sirloin steak	12.8	54.0	16.5	16.1	.....	.9	975
Neck	27.6	45.9	14.5	11.9	.....	.7	1,165
Ribs	20.8	43.8	13.9	21.2	.....	.7	1,135
Rib rolls	.....	63.9	19.3	16.7	.....	.9	1,055
Round	7.2	60.7	19.0	12.8	.....	1.0	890
Rump	20.7	45.0	13.8	20.2	.....	.7	1,090
Shank, fore	36.9	42.9	12.8	7.3	.....	.6	545
Shoulder and clod	16.4	56.8	16.4	9.8	.....	.9	715
Fore quarter	18.7	49.1	14.5	17.5	.....	.7	995
Hind quarter	15.7	50.4	15.4	18.3	.....	.7	1,045
Beef, corned, canned, pickled, and dried:							
Corned beef	8.4	49.2	14.3	23.8	.....	4.6	1,245
Tongue, pickled	6.0	58.9	11.9	19.2	.....	4.3	1,010
Dried, salted, and smoked	4.7	53.7	26.4	6.9	.....	8.9	790
Canned boiled beef	.....	51.8	25.5	22.5	.....	1.3	1,410
Canned corned beef	.....	51.8	26.3	18.7	.....	4.0	1,270
Veal:							
Breast	21.3	52.0	15.4	11.0	.....	.8	745
Leg	14.2	60.1	15.5	7.9	.....	.9	625
Leg cutlets	3.4	68.3	20.1	7.5	.....	1.0	695
Fore quarter	24.5	54.2	15.1	6.0	.....	.7	535
Hind quarter	20.7	56.2	16.2	6.6	.....	.8	580
Mutton:							
Flank	9.9	39.0	13.8	36.9	.....	.6	1,770
Leg, hind	18.4	51.2	15.1	14.7	.....	.8	890
Loin chops	16.0	42.0	13.5	28.3	.....	.7	1,415
Fore quarter	21.2	41.6	12.3	24.5	.....	.7	1,235
Hind quarter, without tallow	17.2	45.4	13.8	23.2	.....	.7	1,210
Lamb:							
Breast	19.1	45.5	15.4	19.1	.....	.8	1,075
Leg, hind	17.4	52.9	15.9	13.6	.....	.9	860
Pork, fresh:							
Ham	10.7	48.0	13.5	25.9	.....	.8	1,320
Loin chops	19.7	41.8	13.4	24.2	.....	.8	1,245
Shoulder	12.4	44 9	12.0	29.8	.....	.7	1,450
Tenderloin	.....	66.5	18.9	13.0	.....	1.0	895
Pork, salted, cured, and pickled:							
Ham, smoked	13.6	34.8	14.2	33.4	.....	4.2	1,635
Shoulder, smoked	18.2	36.8	13.0	26.6	.....	5.5	1,335
Salt Pork	.....	7.9	1.9	86.2	.....	3.9	3,555
Bacon, smoked	7.7	17.4	9.1	62.2	.....	4.1	2,715
Sausage:							
Bologna	3.3	55.2	18.2	19.7	.....	3.8	1,155
Pork	.....	39.8	13.0	44.2	1.1	2.2	2,075
Frankfort	.....	57.2	19.6	18.6	1.1	3.4	1,155
Soups:							
Celery, cream of	.....	88.6	2.1	2.8	5.0	1.5	235
Beef	.....	92.9	4.4	.4	1.1	1.2	120
Meat stew	.....	84.5	4.6	4.3	5.5	1.1	365
Tomato	.....	90.0	1.8	1.1	5.6	1.5	185
Poultry:							
Chicken, broilers	41.6	43.7	12.8	1.4	.....	.7	305
Fowls	25.9	47.1	13.7	12.3	.....	.7	765
Goose	17.6	38.5	13.4	29.8	.....	.7	1,475
Turkey	22.7	42.4	16.1	18.4	.....	.8	1,060

TABLE I.—Average composition of common American food products.

Food materials (as purchased).	Refuse	Water	Protein	Fat	Carbohydrates	Ash	Fuel Val. per lb.
ANIMAL FOOD—Continued.	pr ct	pr ct	pr ct	pr ct	pr ct	pr ct	calories
Fish:							
Cod, dressed	29.9	58.5	11.1	.2	.....	.8	220
Halibut, steaks or sections	17.7	61.9	15.3	4.4	.....	.9	475
Mackerel, whole	44.7	40.4	10.2	4.2	.....	.7	370
Perch, yellow, dressed	35.1	50.7	12.8	.7	.....	.9	275
Shad, whole	50.1	35.2	9.4	4.8	.....	.7	380
Shad, roe	.....	71.2	20.9	3.8	2.6	1.5	600
Fish, preserved:							
Cod, salt	24.9	40.2	16.0	.4	.....	18.5	325
Herring, smoked	44.4	19.2	20.5	8.8	.....	7.4	755
Fish, canned:							
Salmon	.....	63.5	21.8	12.1	.....	2.6	915
Sardines	*5.0	53.6	23.7	12.1	.....	5.3	950
Shellfish:							
Oysters, "solids"	.....	88.3	6.0	1.3	3.3	1.1	225
Clams	.....	80.8	10.6	1.1	5.2	2.3	340
Crabs	52.4	36.7	7.9	.9	.6	1.5	200
Lobsters	61.7	30.7	5.9	.7	.2	.8	145
Eggs: Hens' eggs	†11.2	65.5	13.1	9.3	.....	0.9	635
Dairy products, etc.:							
Butter	.....	11.0	1.0	85.0	.....	3.0	3,410
Whole milk	.....	87.0	3.3	4.0	5.0	.7	310
Skim milk	.....	90.5	.34	.3	5.1	.7	165
Buttermilk	.....	91.0	3.0	.5	4.8	.7	160
Condensed milk	.....	26.9	8.8	8.3	54.1	1.9	1,430
Cream	.....	74.0	2.5	18.5	4.5	.5	865
Cheese, Cheddar	.....	27.4	27.7	36.8	4.1	4.0	2,075
Cheese, full cream	.....	34.2	25.9	33.7	2.4	3.8	1,885
VEGETABLE FOOD.							
Flour, meal, etc.:							
Entire-wheat flour	.....	11.4	13.8	1.9	71.9	1.0	1,650
Graham flour	.....	11.3	13.3	2.2	71.4	1.8	1,645
Wheat flour, patent roller process—							
High-grade and medium	.....	12.0	11.4	1.0	75.1	.5	1,635
Low grade	.....	12.0	14.0	1.9	71.2	.9	1,640
Macaroni, vermicelli, etc.	.....	10.3	13.4	.9	74.1	1.3	1,645
Wheat breakfast food	.....	9.6	12.1	1.8	75.2	1.3	1,680
Buckwheat flour	.....	13.6	6.4	1.2	77.9	.9	1,605
Rye flour	.....	12.9	6.8	.9	78.7	.7	1,620
Cornmeal	.....	12.5	9.2	1.9	75.4	1.0	1,645
Oat breakfast food	.....	7.7	16.7	7.3	66.2	2.1	1,800
Rice	.....	12.3	8.0	.3	79.0	.4	1,620
Tapioca	.....	11.4	.4	.1	88.0	.1	1,650
Starch	.....	.....	.....	.....	90.0	.....	1,675
Bread, pastry, etc.:							
Wheat bread	.....	35.3	9.2	1.3	53.1	1.1	1,200
Brown bread	.....	43.6	5.4	1.8	47.1	2.1	1,040
Graham bread	.....	35.7	8.9	1.8	52.1	1.5	1,195
Whole wheat bread	.....	38.4	9.7	.9	49.7	1.3	1,130
Rye bread	.....	35.7	9.0	.6	54.2	1.5	1,170
Cake	.....	19.9	6.3	9.0	63.3	1.5	1,630
Cream crackers	.....	6.8	9.7	12.1	69.7	1.7	1,925
Oyster crackers	.....	4.8	11.3	10.5	70.5	2.9	1,910
Soda crackers	.....	5.9	9.8	9.1	73.1	2.1	1,875
Sugars, etc.:							
Molasses	.....	.....	.....	.....	70.0	.....	1,225
(b) Candy	.....	.....	.....	.....	96.0	.....	1,680
Honey	.....	.....	.....	.....	81.0	.....	1,420
Sugar, granulated	.....	.....	.....	.....	100.0	.....	1,750
Maple syrup	.....	.....	.....	.....	71.4	.....	1,250

*Refuse, oil.

†Refuse and shell.

(b) Plain confectionery not containing nuts, fruits, or chocolates.

TABLE I.—Average composition of common American food products.

Food materials (as purchased).	Refuse	Water	Protein	Fat	Carbohydrates	Ash	Fuel Val. per lb.
	pr ct	pr ct	pr ct	pr ct	pr ct	pr ct	calories
‡Vegetables:							
Beans, dried	.....	12.6	22.5	1.8	59.6	3.5	1,520
Beans, Lima, shelled	.....	68.5	7.1	.7	22.0	1.7	540
Beans, string	7.0	83.0	2.1	.3	6.9	.7	170
Beets	20.0	70.0	1.3	.1	7.7	.9	160
Cabbage	15.0	77.7	1.4	.2	4.8	.9	115
Celery	20.0	75.6	.9	.1	2.6	.8	65
Corn, green (sweet), edible portion	.....	75.4	3.1	1.1	19.7	.7	440
Cucumbers	15.0	81.1	.7	.2	2.6	.4	65
Lettuce	15.0	80.5	1.0	.2	2.5	.8	65
Mushrooms	.....	88.1	3.5	.4	6.8	1.2	185
Onions	10.0	78.9	1.4	.3	8.9	.5	190
Parsnips	20.0	66.4	1.3	.4	10.8	1.1	230
Peas (Pisum sativum), dried	.....	9.5	24.6	1.0	62.0	2.9	1,565
Peas (Pisum sativum), shelled	.....	74.6	7.0	.5	16.9	1.0	440
Cowpeas, dried	.....	13.0	21.4	1.4	60.8	3.4	1,505
Potatoes	20.0	62.6	1.8	.1	14.7	.8	295
Rhubarb	40.0	56.6	.4	.4	2.2	.4	60
Sweet potatoes	20.0	55.2	1.4	.6	21.9	.9	440
Spinach	.....	92.3	2.1	.3	3.2	2.1	95
Squash	50.0	44.2	.7	.2	4.5	.4	100
Tomatoes	.....	94.3	.9	.4	3.9	.5	100
Turnips	30.0	62.7	.9	.1	5.7	.6	120
Vegetables, canned:							
Baked beans	.....	68.9	6.9	2.5	19.6	2.1	555
Peas (Pisum sativum), green	.....	85.3	3.6	.2	9.8	1.1	235
Corn, green	.....	76.1	2.8	1.2	19.0	.9	430
Succotash	.....	75.9	3.6	1.0	18.6	.9	425
Tomatoes	.....	94.0	1.2	.2	4.0	.6	95
*Fruits, berries, etc., fresh:							
Apples	25.0	63.3	0.3	0.3	10.8	0.3	190
Bananas	35.0	48.9	.8	.4	14.3	.6	260
Grapes	25.0	58.0	1.0	1.2	14.4	.4	295
Lemons	30.0	62.5	.7	.5	5.9	.4	125
Muskmelons	50.0	44.8	.3	.....	4.6	.3	80
Oranges	27.0	63.4	.6	.1	8.5	.4	150
Pears	10.0	76.0	.5	.4	12.7	.4	230
Persimmons, edible portion	.....	66.1	.8	.7	31.5	.9	550
Raspberries	.....	85.8	1.0	.....	12.6	.6	220
Strawberries	5.0	85.9	.9	.6	7.0	.6	150
Watermelons	59.4	37.5	.2	.1	2.7	.1	50

‡Such vegetables as potatoes, squash, beets, etc., have a certain amount of inedible material, skin, seeds, etc. The amount varies with the method of preparing the vegetables, and can not be accurately estimated. The figures given for refuse of vegetables, fruits, etc., are assumed to represent approximately the amount of refuse in these foods as ordinarily prepared.

*Fruits contain a certain proportion of inedible materials, as skin, seeds, etc., which are properly classed as refuse. In some fruits, as oranges and prunes, the amount rejected in eating is practically the same as refuse. In others, as apples and pears, more or less of the edible material is ordinarily rejected with the skin and seeds and other inedible portions. The edible material which is thus thrown away, and should properly be classed with the waste, is here classed with the refuse. The figures for refuse here given represent, as nearly as can be ascertained, the quantities ordinarily rejected.

TABLE I.—Average composition of common American food products.

	pr ct	pr ct	pr ct	pr ct	pr ct	pr ct	calories
Fruits, dried:							
Apples		28.1	1.6	2.2	66.1	2.0	1,185
Apricots		29.4	4.7	1.0	62.5	2.4	1,125
Dates	10.0	13.8	1.9	2.5	70.6	1.2	1,275
Figs		18.8	4.3	.3	74.2	2.4	1,280
Raisins	10.0	13.1	2.3	3.0	68.5	3.1	1,265
Nuts:							
Almonds	45.0	2.7	11.5	30.2	9.5	1.1	1,515
Brazil nuts	49.6	2.6	8.6	33.7	3.5	2.0	1,485
Butternuts	86.4	.6	3.8	8.3	.5	.4	385
Chestnuts, fresh	16.0	37.8	5.2	4.5	35.4	1.1	915
Chestnuts, dried	24.0	4.5	8.1	5.3	56.4	1.7	1,385
Cocoanuts	‡48.8	7.2	2.9	25.9	14.3	.9	1,295
Cocoanut, prepared		3.5	6.3	57.4	31.5	1.3	2,865
Filberts	52.1	1.8	7.5	31.3	6.2	1.1	1,430
Hickory nuts	62.2	1.4	5.8	25.5	4.3	.8	1,145
Pecans, polished	53.2	1.4	5.2	33.3	6.2	.7	1,465
Peanuts	24.5	6.9	19.5	29.1	18.5	1.5	1,775
Pinon [Pinus edulis]	40.6	2.0	8.7	36.8	10.2	1.7	1,730
Walnuts, black	74.1	.6	7.2	14.6	3.0	.5	730
Walnuts, English	58.1	1.0	6.9	26.6	6.8	.6	1,250
Miscellaneous:							
Chocolate		5.9	12.9	48.7	30.3	2.2	2,625
Cocoa, powdered		4.6	21.6	28.9	37.7	7.2	2,160
†Cereal coffee, infusion (1 part boiled in 20 parts water)		98.2	.2		1.4	.2	30

†The average of five analyses of cereal coffee grain is: Water 6.2, protein 13.3, fat 3.4, carbohydrates 2.6, and ash 4.5 per cent. Only a portion of the nutrients, however, enter into the infusion. The average in the table represents the available nutrients in the beverage. Infusion of genuine coffee and of tea like the above contain practically no nutrients.

‡Milk and shell.

Nonnutrients in Foods

A careful study of the composition of foods from Table 1. is important. In considering the food and economic value of food materials it is necessary to note the proportions of non-nutrients, i. e., refuse and water. The skin and bones of meat, and fish, the skin or rind and seeds of vegetables lessen the proportion of nutrients. Refuse is not commonly found among the dairy products, dried vegetables, cereal foods and foods prepared from them. Water constitutes a large proportion of even the solid foods. Beans, peas, meals, flour, cereal breakfast foods, etc., contain, roughly speaking, 10 to 12 per cent of water. 40 to 50 per cent of the ordinary cuts of meats are water and it is abundant in the flesh of lean animals, and tends to decrease as fats increase and vice versa. Fresh vegetables and fruits contain some times as much as 80 to 90 per cent of water.

Many cooked foods contain more water than the raw material from which they are made owing to the water added in cooking. Thin soups are little more than flavored and colored water. In some cooked foods, notably meats, which have been baked, roasted or fried, the amount of water is diminished by cooking.

Nutrients in Food

The most important of the actual nutrients is protein. It is most abundant in the animal foods, legumes (peas and beans), and in smaller proportions in the cereals. Fats occur chiefly in the animal foods. Carbohydrates are found almost exclusively in the vegetable products and milk. Small quantities of minerals are found

in all foods. The most water and refuse are found in meat, fish, milk, fresh vegetables and fruits.

Actual Values in Food Materials

The market price of food materials is not regulated by their actual value for nutriment.

An ounce of protein or fat from the tenderloin of beef is no more nutritious than that from a round or shoulder, but it costs considerably more.

The agreeableness of food to the palate or fancy of the buyer is a great factor in deciding current demand and consequent selling prices.

Animal foods, such as meats, fish, milk, and cheese gratify the palate as many vegetables do not. Furthermore, they satisfy the need of supplying protein and fats in which the vegetable foods, excepting leguminous seeds and cereal grains, are lacking. Also animal foods are in general more easily digested, especially as regards protein, and consequently cheaper for the same quantity of nutritive material.

Ready prepared foods are justly higher in price owing to the expense in time, labor and facilities in the process of preparation for eating. They provide convenience in preparaton for serving, are generally palatable and furnish a pleasing variety. Prepared foods may contain greater nutritive value per bulk or weight than the same materials in the natural state owing to condensation by evaporation in the processes of preparation.

Since the cost of food is the principal item in the living expenses of most people, and the physicial welfare of all is dependent upon diet it is specially important that we have clear ideas regarding the nourishment to be gotten from the different food materials. To economize we must know the combinations which are best fitted for nourishment and have definite information as to the relation between the nutritive values of the different foods and the expense in getting and preparing them.

Among the different food materials which are palatable, nutritious and otherwise suited for nourishment we must know which ones furnish the largest amounts of available nutriments at the lowest cost. It is therefore necessary to take into account not only the prices per pound, quart or bushel of the different materials but also the kinds and amounts of the actual nutrients they contain, together with their fitness to meet the demands of the body. The cheapest food is that which supplies the most nutriment for the least money. The most economical food is that which is both cheapest and best adapted to the needs of the user.

Adaptation of Foods

All persons are alike in that they must have protein for the building and repair of the bodily machine and fuel ingredients for warmth and work, but individuals differ in the amounts and propor-

tions they require, and even among those in good health there are many who are obliged to avoid certain kinds of food, while invalids and people with weak digestion must often have special diet.

For guidance in the selection of food nature provides us with instinct, taste and experience. Physiological chemistry adds the knowledge of the composition of food and the processes in nutrition. The following rules should be observed in the regulation of the diet for people in good health and with good digestion:

1. Choose the things which "agree" with you and avoid those which can not digest and be assimilated.

2. Use such kinds and amounts of food as will supply all the nutrients the body needs without burdening the digestive organs.

3. Do not allow your appetite to overrule reason and the teachings of experience.

4. Use the ordinary food materials—flour, meal, potatoes, milk, butter, cheese, sugar, fish and meat—in the proportions fitted to the actual needs of the body.

5. Over-eating results in over-taxed digestive organs, wasted energy, general debility and possibly fatty tissue and actual disease.

Advantage of Several Meals a Day

A definite amount of food materials is necessary to provide the body of each person with tissue, energy and heat. It is better to furnish the food materials at three ordinary meals than at two hearty meals. Moderate quantities of food taken at moderate intervals are more easily and completely digested than large quantities at long intervals. The universal custom of three meals per day based upon instinct and experience indicates the wisdom.

A General Plan for a Day's Menu

(From Perdue University, Agri. Ext. Service)

A general plan showing foods suited to each day's menu is given as follows:

BREAKFAST PLAN

1. Fruit.
3. Whole grain cereal.
3. Some kind of bread.
4. A hot drink.
5. (Some tissue building food as eggs, or meat or fish if so desired.)

DINNER PLAN

1. One meat dish, eggs in some form may be substituted.
2. One starchy vegetable such as potatoes or rice.
3. Some kind of bread.
4. One watery vegetable as lettuce, asparagus or onions.
5. One simple dessert such as orange snow or prune whip after heavy meal.

SUPPER OR LUNCHEON PLAN

1. One hot dish such as meat or meat substitute as cheese fondue, macaroni and cheese, a cream soup or beans in some form.
2. Some kind of bread.
3. Some vegetable if desired.
4. Some simple dessert such as canned or stewed fruit or tapioca pudding.
5. One kind of preserves or jelly if so desired.

Meal-Planning

(From Cornell Reading Courses)

Although the best type of meal-planning must be based on a thorough knowledge of human nutrition, much may be accomplished by an understanding of a few simple dietary rules. Although by following these rules it may not be possible to find the pot of gold at the end of the rainbow, the "balanced ration," on the other hand it may be entirely possible to do something very practical—to give balance to the daily dietary and to gain a certain freedom from family food customs, neighborhood food traditions, and, let us even hope, from personal food likes and dislikes.

To balance the dietary means: to supply in the meals of each day, in a form best suited to the individual, all the substances needed to build the tissues, bone, muscle, nerves, blood; to provide energy for the day's activities; to keep the body in good working order.

A dietary may contain ample bone-building material and may lack the substances needed to produce red blood corpuscles. The needs of muscles may be satisfied while bones and nerves remain hungry; or all tissues may be well supplied, but the dietary may be lacking in substances that regulate such processes as the flow of digestive juices, the activity of the intestine and its ability to empty itself, or the purification of the blood through neutralizing harmful compounds produced by the work of the body. The various body needs must therefore be taken into account in the planning of the dietary.

Choice of Foods for Body Needs

It is not possible to make an exact grouping of foods according to the definite part that each is capable of playing in the dietary, for most common foods are able to play several parts and therefore may satisfy a variety of needs. In a general way, however, it is possible to indicate which foods best serve a certain body need.

Foods especially adapted to furnish the foundation substances of all living, active tissues: Milk, eggs, cheese, meat, legumes, nuts, cereals.

While all these foods are nourishing, they cannot replace one another in every respect. For example, either milk or eggs might be chosen for the purpose of muscle-building; but milk is much richer than eggs in bone-building, and lime and eggs are richer than milk in red-blood-corpuscle-producing. Cereals, legumes, and nuts are all rich-

er in energy than are milk, eggs, or meat, and meat has a stimulating property lacked by the others.

Foods especially adapted to supply the body with energy: Cereals, legumes, foods rich in starch and sugar, foods rich in fat.

Foods especially adapted to supply lime to the diet: Milk, legumes, whole cereals, cabbage, celery.

Milk is the best source of lime. No food can replace it satisfactorily in the diet of the growing child.

Foods especially adapted to supply iron to the diet: eggs, legumes, oatmeal, vegetables, meats, fruits.

Foods especially adapted to stimulate the activity of the intestine , and thus to keep the body clean: Fruits, vegetables, cereals and cereal foods containing part or all of the outer layers of the grain.

Foods especially adapted to neutralize harmful substances produced in the tissues and blood: Fruits, vegetables.

The main part of the meals of each day should consist of simply prepared, mild-flavored, non-stimulating, and easily digested foods.

Well-cooked cereals, thoroughly baked, sweet-flavored bread; potatoes; milk; eggs; fresh, succulent vegetables; and fruits—these should constitute the background of the dietary.

Meats and meat soups, candies, preserves, desserts, cakes and other sweets, rich sauces, pickles, and condiments should be used in moderation in order to give color and interest to the dietary, but they should not furnish the bulk of the food at any one meal. a.

a. Cornell Reading Courses Food series.

Balanced Ration

Owing to the wide variety of food materials from which we may get the compounds needed for body building, repair, regulation, warmth and energy, selection is necessary. Instinct, appetite, experience and chemical analysis all may guide in the proper selection. The craving of natural appetite under normal conditions indicates a need of the body. Experience, together with a knowledge of the needs of the body and the compounds in food make possible intelligent eating.

In order that food may fully and properly supply the necessary materials just as they are required the daily meals must be "balanced." A properly balanced meal is one which fully meets the needs of the body of the one eating it. We can only approach the perfectly "balanced meal" and are forced to rely then upon instinct, appetite and experience. Fortunately nature greatly assists human limitations by substitutions and adaptations in the digestive processes. When the food we eat fails of the bodily needs grave consequences may result, such as arrested development, debility and disease.

It is very important that we know at the out-set that no two people need exactly the same foods at all times. Age, occupation, bodily weaknesses, excessive bodily supplies, powers of digestion and assimilation together with a number of other influences must be

considered in the adaptation of foods to the needs of the body. Thus the matter of balancing a ration is a many sided problem and requires diligent study, pains-taking care and a wide range in the knowledge of foods, their content and adaptability in the processes of digestion.

Many of the known diseases are traceable to the habits of eating and the consequent evil- effects. Headache, indigestion, liver trouble, impure blood and kindred ailments are due as a rule to some aspect of the problem of proper food and right eating; and all bodily difficulties are modified and relieved by proper foods and habits of eating.

Rules for Planning Inexpensive Meals

A few rules and commonly known facts regarding the composition, uses and effects of the common foods may greatly assist in the selection and preparation of food for the daily ration. The following are suggestive:

Plan meals for the day that each may provide some of the essential compounds: i. e., protein, fats, carbohydrates, mineral matter and water.

One heavy protein dish in the form of meat is sufficient for a day when properly supplemented with milk, legumes (beans or peas), eggs, cheese, etc., age and physicial activity dictating amounts. Children under five years of age should have little or no meat.

Fat provides fuel in a concentrated form, is laxative and a nerve builder. The more digestible forms of fat are: cream, butter, olive oil, crisp bacon, etc.

Carbohydrates are the chief source for energy and heat of the body and are more digestible and more economical than fats. Especially is this true of the starchy forms; such as cereals, potatoes, etc.

Milk is the best source for two of the minerals—lime and calcium—it being necessary to the growth of children. Necessary iron for the blood should be provided by yolk of egg or strained vegetables.

Fresh vegetables and fruits all contain mineral matter and should be a part of every diet.

Water is essential to the food nutrients. It dissolves and reduces food substances to liquid making them more digestible. It is essential in removing waste from the body and is a regulator of bodily heat by means of the respiratory glands of the skin. About five pints of water can be profitably taken by an adult in one day.

Sweets in the dietary are unquestionably desirable, but they should be served in such a manner as not to reduce the appetite for other foods and not to satisfy the appetite with sweet foods only. "Sweets" should be eaten with other foods and at the close of the meal.

Tea and coffee should be used sparingly by adults and never by

children. Strong acid drinks are not advisable for either children or adults. Cocoa may be given to children after the fifth year.

Meals to fully meet the needs of the body should satisfy a normal hunger.

Bulk is essential in the well regulated diet because it stimulates the flow of digestive juices and aids in carrying away waste materials. It is an important factor in preventing constipation.

It is best to have contrast and variety represented in the food of a meal, heavy and light foods, sweet and sour, etc.

If the dietary supplies sufficient iron, calcium and phosphorus there will be sufficient supply of the other minerals.

The body uses the carbohydrates first, then fats and lastly its muscular tissue for fuel.

The dietary should be planned so as to meet the needs of all members of the family. The main part of the meal may be made suitable to all, and to this the foods specially needed by each may be added. Little children should not eat all foods allowable to adults, nor should the grown members of the family be limited to the same simplicity of diet as the children, for children have undeveloped digestive organs that will be over-taxed by heavy foods. The strength of food in the diet of the child should be increased only as the muscles of the digestion strengthen and develop. Foods that are too strong over-tax the immature digestive tract and foods that are too weak fail to develop it. Hard muscular work increases the need for the energy-producing foods, but does not materially affect the need for other types of food.

Suggested Menus

(From Home Econ. Dep't. Perdue University)

The following menus are inexpensive and should supply the needs of a family group containing both children and adults.

SUMMER MENUS

Menu I

Breakfast—Steward rhubarb, shredded wheat biscuits, bran muffins, milk and coffee.

Dinner—Cream of Spinach soup, nut loaf, cream sauce, fruit salad, graham bread, caramel custard.

Supper—Escalloped cabbage, baked potatoes, graham bread, rhubarb tapioca, oatmeal wafers.

Menu II

Breakfast—Fresh fruit, cornflakes, cinnamon toast, milk and coffee.

Dinner—Creamed dried beef on toast, rice, string beans (buttered), bread, berry shortcake.

Supper—Potato salad with mayonnaise, Graham bread sandwiches, cookies, cocoa.

Menu III

Breakfast—Raspberries, cooked cereal, toast, milk and coffee.

Dinner—Salmon creamed with rice on toast, peas, lettuce salad, bread, cottage pudding with berry sauce.

Supper—Creamed asparagus on toast, cottage cheese, fresh fruit, brown bread.

Menu IV

Breakfast—Fresh fruit, cracked wheat, popovers, milk and coffee.

Dinner—Beefsteak pie with biscuit crust, buttered beets, mashed potatoes, pineapple ice.

Supper—Creamed potatoes, egg salad, saltines, lemon jelly.

Menu V

Breakfast—Apple sauce, grape nuts, Graham toast, milk and coffee.

Dinner—Vegetable soup, salmon loaf, egg sauce, baked potatoes, sliced cucumbers, fresh fruit.

Supper—Creamed macaroni, sliced tomatoes, raisin bread sandwiches, custard.

Menu VI

Breakfast—Strawberries, puffed wheat, omelet, toast, milk and coffee.

Dinner—Escalloped rice, tomatoes and meat, cabbage salad, bread, cherry pie.

Supper—Vegetable salad with a legume and an egg dressing, baking powder biscuits, honey, sliced peaches.

Menu VII

Breakfast—Fresh cherries, wheat flakes, Graham Muffins, milk and coffee.

Dinner—Hamburg steak with onions, mashed potatoes, creamed cauliflower, bread, baked apple with cream.

Supper—Eggs a la goldenrod, baked potatoes, tomatoes and cucumber salad, pineapple pudding.

WINTER MENUS

Menu I

Breakfast—Stewed prunes, oatmeal, toast, creamed codfish, milk and coffee.

Dinner—Flank steak roast, dressing with gravy, rice, bread, lettuce salad, cherry pudding.

Supper—Corn chowder, gingerbread, rhubarb, milk and tea.

Menu II

Breakfast—Stewed apricots, cream of wheat with bran, French toast with syrup, milk and coffee.

Dinner—Pot roast of beef with gravy, brown potatoes, Graham bread, lettuce salad, prune pie.

Supper—Escalloped lima beans, bread, pineapple tapioca, milk and tea.

Menu III

Breakfast—Bananas, oatmeal, bran muffins, milk and coffee.

Dinner—Cottage pie, creamed lima beans, Graham bread, apricot tapioca.

Supper—Tomato soup with rice, saltines, banana and pineapple salad.

Menu IV

Breakfast—1-2 orange, farina, corn griddle cakes, milk and coffee.

Dinner—Meat loaf with brown sauce, creamed macaroni, escalloped tomatoes, bread, brown betty.

Supper—Macaroni and cheese, Graham bread, stewed prunes, milk and coffee.

Menu V

Breakfast—Apple sauce, cracked wheat, creamed beef on toast, milk and coffee.

Dinner—Escolloped eggs with ham, baked potatoes, bread, orange snow.

Supper—Tomato and kidney bean stew, graham bread, apple tapioca, milk.

Menu VI

Breakfast—Stewed peaches, oatmeal, graham muffins, milk and coffee.

Dinner—Creamed codfish, baked potatoes, bread, buttered beets, cherry pie.

Supper—Cheese souffle, graham bread, peach cobbler, milk.

Menu VII

Breakfast—Stewed figs, cream of wheat with bran, frizzled ham, milk and coffee.

Dinner—Boston baked beans, brown bread, creamed onions, lemon jelly.

Supper—Potato soup, saltines, fruit salad, peanut cookies.

LEFTOVER FOODS

(From Iowa State Agricultural College Extension Department—Home Economics.)

"WASTE NOT, WANT NOT"

The American housekeeper has had an unenviable reputation as a careless buyer, a thoughtless manager and a reckless waster of foods. In no other way has this been more apparent than in the custom in many homes to throw away bits of leftover food materials which might

be put to good use. Much more credit is due to the woman who, as far as possible, prevents the accumulation of leftovers but who uses them wisely as they are found, than to the woman who cooks fresh food attractively and well, but who throws away foods which still contain food value and which might form the basis of palatable dishes.

Leftovers and Some Uses

Bread—White, graham, whole wheat, corn, rye, toast, biscuit, pancake or waffle batter.

Meat and Eggs—Beef, pork, ham, bacon, chicken, fish, eggs—boiled, fried or scrambled.

Gravy.

Vegetables—String beans, onions, potatoes, beans, peas, corn.

Cereals—Rice, macaroni, oatmeal, cornmeal, cream of wheat, hominy.

Fruit Sauces—Apple, prune, rhubarb, cranberry, etc.

Fats—Suet, bacon fat, meat fryings, chicken fat, butter.

Prevent leftovers (when possible):

1. By careful planning. Do not serve too many kinds of food at each meal. Provide variety between meals. Do not cook too great an amount of each food.

2. By careful serving. Do not serve too generously. It is better to have a second helping in reserve, so that if not eaten it may be used later.

Use leftovers (when at hand):

1. Practice economy—true, not false. Other things than money should be considered in practicing economy. The fuel to be used; the time to be spent; the food value to be saved and the additions that must be made should all be taken into account. Use good judgment in the selection of leftovers to be used.

2. Consider appearance. More skill is needed to make leftover dishes attractive than the fresh foods. The wise housekeeper will remember this and make her leftover dishes as attractive in appearance as she can.

3. Prevent monotony. Practice making many different leftover dishes. The family will soon tire of the same food cooked in the same way many times.

4. Provide flavor. Remember that many leftover foods, particularly meat, have lost their original flavor and must be made tempting if they are to prove popular with the family in the madeover dish. This does not mean that extravagant flavorings must be used, however. Select the highly flavored vegetables, as well as the standard seasonings.

USES FOR LEFTOVER BREAD

Bread puddings
Other puddings
Stuffing
Buttered crumbs
Croquettes
Scalloped dishes
Bread sticks
Croutons
Patty shells
Cake
Bread
French toast
Toast with meat or vegetables in gravy
Griddle cakes
Dumplings made of leftover biscuits and served with gravy

USES FOR LEFTOVER MEAT AND EGGS

Meat pie
Scalloped dishes
Salads
Hash
Timbales
Souffles
Chop suey
Jellied meat
Croquettes
Meat loaves
Eggs as garnish
Eggs in salad dressing
Sandwich filling
Creamed meat or eggs on toast
Omelets with ground meat or eggs
Custards with ground meat or eggs
Peppers stuffed
Tomatoes stuffed
Combined with rice, macaroni, potatoes, peas, beans
Meat patties
Stuffed biscuits
Meat pancakes
Acidulated beef on toast
Stuffed potatoes
Meat bones for soup stock

USES FOR LEFTOVER VEGETABLES

Mashed potatoes
Soup
Potato puff
Souffle
Stuffing
Croquettes
Boiled potatoes
Au gratin
Creamed
Salad
Hash
Baked potatoes stuffed
Baked potatoes au gratin
Baked potatoes
Stuffed
Cakes
Doughnuts
Loaf
Custards
Scalloped
Chop suey
Garnished with meat
Vegetable chowder
Meat pies
Pulp used as mashed potatoes

OTHER VEGETABLES

Meat pies
Salads
Chop suey
Soups
Souffles
Stuffed peppers
Vegetables on toast
Pickles
Vegetable relish
Meat stews

Patties
Custards
Creamed vegetables
Jellied vegetables
Croquettes
Scalloped vegetables
Sandwiches
Vegetable stock for soups and sauces
Garnish for roast
Stuffing
Vegetable chowder
Vegetable loaf

USES FOR LEFTOVER CEREALS

Meat loaf
Souffle
Timbales
Croquettes
Hash
Muffins
Pancakes
Soup
Cereal jelly
Peppers—stuffed
Puddings
Fried cornmeal mush
Fried oatmeal mush
Fried cream of wheat mush

USES FOR LEFTOVER FATS

Cake
Pastry
Soap
Bread
Soups
Sauce, white
Tomato and other vegetable sauces
Gravy

USES FOR LEFTOVER FRUIT SAUCES

Cake
Pudding
Pie
Gelatin dessert
Sauces for dry cake
Fruit whips
Pudding sauces

LEFTOVER RECIPES

LEFTOVER BREAD—RHUBARB AND BREAD PUDDING

Four slices dry bread (buttered), 2 cups rhubarb (uncooked), three-fourths cup sugar, one-fourth teaspoonful nutmeg.

Place a layer of rhubarb (cut in inch pieces) in the bottom of a buttered baking dish, sprinkle with sugar and nutmeg. Then place a slice of bread, more rhubarb and more bread until dish is filled, having last layer of rhubarb, sugar and nutmeg. Bake until rhubarb is soft.

LEFTOVER MEAT—STUFFED BISCUIT

Leftover cooked meat, biscuit dough, two cups flour, four teaspoons baking powder, one teaspoon salt, three teaspoons fat, three-fourths cup milk or water.

Combine biscuit dough and roll on board one-half inch thick. Cut as for biscuit, spread half of each biscuit with melted fat, place a small amount of meat (ground and mixed with gravy and seasoning) on the biscuit and fold over as for Parker House rolls. Bake and serve with gravy.

LEFTOVER VEGETABLES—VEGETABLE SOUP

One-fourth pound ground raw beef, two cups cold water, two cups vegetable stock, one-half cup rice (uncooked), one-half cup each of

ground cooked carrots and cooked beans cut in inch pieces, salt and pepper.

Soak beef one-half hour in cold water. Add vegetable water and rice. Boil until rice is done. Add carrots, string beans, salt and pepper. Heat and serve.

[NOTE—Raw vegetables may be used by adding to the soup with the rice. Any leftover vegetables may be used to take the place of carrots and string beans.]

LEFTOVER CEREALS—CEREAL OMELET

One cup cold cooked cereal, two eggs, one-half teaspoon salt, one tablespoon parsley, one tablespoon fat.

Beat eggs well, add cereal, salt and parsley. Melt fat in omelet pan and turn in the mixture. Cook with moderate heat until firm. Fold, turn on hot platter and serve.

LEFTOVER FRUIT JUICE—RHUBARB PUDDING SAUCE

One-half cup sugar, two tablespoons flour, one cup rhubarb juice, two tablespoons butter, one-eighth teaspoon nutmeg.

Mix flour and sugar, add fruit juice and cook until thickened. Add butter and nutmeg.

[NOTE—This sauce is good served over stale cake.]

LEFTOVER FAT—CINNAMON BREAD

One egg, milk, two cups flour, two teaspoons baking powder, one-half teaspoon salt, two teaspoons ground cinnamon, three-fourths cup sugar, two tablespoons bacon fat.

Beat egg in a measuring cup and add enough milk to fill the cup. Sift baking powder and cinnamon with flour and add to egg and milk. Add sugar and melted fat and bake.

SUGGESTED ECONOMY

Use food materials which are most abundant and cheapest: Cornmeal, rice (cracked), milk, cheese and peas and beans (for meat substitutes).

Use home prepared foods: Whole wheat flour, canned and dried fruits and vegetables.

Cook potatoes with peeling on and save valuable nutrients.

Use the tops of garden vegetables for greens, such as beets.

Use bones and trimmings of meat and fowl for soup stock.

Use milk in every form in cookery: Breads, cottage cheese, puddings, soups, sauces, "junket," with cereals and as beverage.

Use few fried foods: Fat delays digestion of other nutrients.

Steam and bake foods—boiling wastes flavor.

Bacon, ham and sausage fats are expensive. Use them to flavor cereals and vegetables. Mix suet with lard for pie crust.

Oleomargarine is a healthful substitute for butter. Beef and mutton fats, cottonseed oil and patent preparations are reliable sources for cooking fats.

Use the water from vegetables in soups and gravy. A well made gravy is a good substitute for butter.

Reduce the consumption of tea and coffee to a minimum. A child under 5 years of age should have a quart of whole milk a day. (Milk contains all the food compounds and is easily digested.)

Use fruit flavors with tapioca, sago, cornstarch and rice.

Substitute butter with other fats in making chocolate, spice and fruit cake, gingerbread and sauces.

Plan all meals and avoid having leftovers when possible. Use any leftovers.

Throw absolutely no food materials away.

Use all precautions to avoid food spoiling.

Use only common foods in season.

WASTE IN FOOD PREPARATION

Due to:

1. Poor selection of the necessary foods—ignorance.
2. Too much of one kind of food (unbalanced ration).
3. High priced food materials when cheaper are equally nutritious.
4. Valuable nutrients lost with parings and refuse—carelessness.
5. Undercooking, overcooking—wrong methods.
6. Unattractive, unpalatable dishes—no art.
7. Poor preservation of foods, handling, spoiling—lack of precaution.
8. Failure to estimate needs—"leftovers"—extravagance.
9. Serving two similar foods—lack of forethought.
10. Waste of fuel—poor management.
11. Variation of dishes and diet.
12. Use of prepared and "canned goods" when others would do.
13. Unwise purchases, small quantities, frequency, wrong material.
14. Unwise use of best foods, milk, cheese, rice, etc.

WASTE IN EATING HABITS

Due to:

1. Rapid eating, poor mastication.
2. Eating too much—wasted energy and food.
3. Eating expensive and unnecessary foods.
4. Irregular eating, too frequent and too much at one time.
5. Eating under stress, in moods or meditation.

DIETARY STANDARDS

The information gained from a study of the composition and nutritive value of foods may be turned to practical account by using it in planning diets for different individuals or groups. It is possible to learn about how much of each of the nutrients of common foods is needed by persons of different occupations and habits of life and from this to compute standards representing the average requirements for food of such persons.

In computing the results of dietary studies the various factors commonly used in the United States, taking the food requirements of a man at moderately active muscular work, as the standard, are as follows:

Man at moderately active muscular work	.1
Man at hard muscular work	1.2
Man at light muscular work and boy 15 to 16,	.9
Man at sedentary occupation and woman at moderately active work, boy 12 to 13, girl 15 to 16 years old require	.8
Woman at light work, boy 12 and girl 13 to 14 years of age require	.7
Boy 10 to 11 and girl 10 to 12 years old require	.6
Child 6 to 9 years old requires	.5
Child 2 to 5 years old requires	.4
Child under 2 years of age requires	.3

These factors are based in part upon experimental data that is subject to revision when evidence shall warrant. a.

a. U. S. Department of Agriculture, Farmers' Bul. 142, pp 33.

CONSERVATION OF FOODS

Potatoes

Peeling potatoes wastes about 25 per cent of the nutritive part. Steaming may save the whole potato. Learn to eat the well cleaned peeling of the baked potato. It's wholesome.

Potatoes rubbed with drippings bake more quickly, save heat, have a better flavor and the potato loses nothing in shrinkage.

Let potatoes stand for fifteen minutes in hot water before baking and you will save half the heat and time of ordinary baking.

Butter

Butter that has grown "strong" with age and exposure may be saved by heating. Melt, skim and use the fat for cooking purposes.

Butter substitute may be made as follows: Bring half-cup of good milk to boil then set aside to cool. When lukewarm add a quarter of pound of unmelted butter, beat with egg beater until mixture is thick and creamy, then cool and let harden. The result though light in color can be satisfactorily used.

Salt added to oils, lard and fats improves their flavor and makes possible their use as butter.

Butter may be substituted by bacon rind in seasoning vegetables.

Sugar

Add a quarter of teaspoonful of soda to each quart of fruit, especially the acid fruits, plums, gooseberries, etc., also to rhubarb and you may save a third of the usual amount of sugar.

A substitute maple flavor may be added to sugar syrup by first boiling corn cobs in the water used for syrup.

Honey makes a good substitute for sugar in making cookies or cake. Use about a third more honey than you would sugar on account of moisture present.

Sweet fruits will often satisfy a child"s craving for sweets.

Fruit juice (orange and lemon, mixed) added to an equal amount of sugar after it has been dissolved in an equal amount of water can be used as sweetening for beverages with a great saving.

Flour

You save over a third the cost of bread by home-baking.

Every crumb of staie bread may be made the basis of an attractive meat dish, hot breads, bread puddings and other desserts. Uneaten cereals can be used to thicken soups, stews and gravies.

Wheat flour may be well substituted by the different products from the other cereals. (See Breads.)

Milk

Sour milk can be utilized in making hot breads, cottage cheese, cream cheese and clabber.

Sour cream is a good shortening for cakes and cookies, and can be made into salad dressings and gravies for meats.

Skim milk may be used in all cookery.

Butter milk may be used as sour milk.

Milk may be kept cool by keeping wet cloth about the bottle.

Milk at twice its usual cost is worth more than meat or eggs based on its food value.

Fruits

Stew wilted fruits and serve with cereals or as a simple sweet for home lunch or supper. When too spoiled for this purpose, cook, press the juice out and use as flavoring extract or as basis for a beverage.

Cores and peelings of practically all fruits, properly cleaned, may be allowed to simmer in kettle with teaspoonful of ginger or piece of ginger root and will result in a palatable beverage.

Dried peels of citrus fruits are valuable for flavoring foods.

Left-over bits of fruit may be combined. Fruit flavors blend well usually and may be used for flavoring puddings, pastry fillings, etc.

Peelings of fruit generally add to the flavor and should not be wasted unless necessary.

Dried fruits may supply the same nutriment though not so pleasing to the taste as fresh fruit.

Eggs

Cover left-over egg yolk with water to prevent crust forming.

Cover egg whites closely and keep in refrigerator.

Egg may be permanently kept with a solution of lime and water in large jars. Pour the clear solution from three pounds of unslacked lime, well slacked in five gallons of water.

The water glass method is similar but more expensive: Pour

solution of one part water glass and ten parts boiled water over eggs in jars. Allow liquid in all cases to come a couple inches above top layer of eggs. Avoid the eggs being exposed to air after entering solution. These methods preserve fresh eggs well from six to eight months.

Fats

All pure fats are equally valuable as food. Those most prized for flavor are most expensive. Cottonseed oils, corn and peanut oils are cheaper and can easily substitute the more expensive olive oil.

Oleomargarines may properly substitute butter. A liberal use of cream should be included in children's diet when oleomargarine is part of their diet.

Fatty portions of meat are greater sources of energy than lean and constitute one of the greatest wastes in the average family.

Drippings from bacon and ham together with fatty portions of all meats can be used well as seasoning for vegetables and salads.

Fats with objectionable odors can be improved with savory herbs, apple or onion, or with strong seasoning materials such as sage.

Rancid fat may be renewed by heating with several pieces of charcoal. Allow it to remain warm several hours and then strain carefully.

Beef and mutton suet are too hard for satisfactory shortening and may be softened by mixing softer fats such as lard or cottonseed oil with them. The following recipes have been found satisfactory: a.

Soft Fat 1. Mix two parts rendered beef or mutton fat and one part lard. Add one-half pint milk to each 2 lbs. of the mixture before rendering. The product may be used for frying or shortening.

Soft Fat 2. Mix three parts rendered beef or mutton fat and one part refined cottonseed oil. Render fats in double boiler. Heat and stir mixture thoroughly. When cooling stir frequently to avoid separating of the fats.

a. Domestic Science Department, University of Nebraska.

Meats

Less meat can be used in the dietary by careful use of meat substitutes and left-over meat.

The following uses for left over meat are recommended by the Kansas State Department of Domestic Science, Agricultural College:

Left over meat may be used as:

1. Croquettes—Any kind of meat, ground, one part mashed potatoes or rice and egg and gravy or stock or white sauce.

2. Hash—Any kind of ground meat and one part potato, mashed or chopped and seasoned. May be in ratio of one part to two parts potato.

3. Stew—Cold steak or roast, cut in cubes. Heat in gravy, season with vegetables.

4. Meat Pie—With No. 3 as a basis put in a baking dish, cover with baking powder biscuit dough and bake in hot oven.

5. Minced Meat on Toast—Cut meat in fine cubes, warm in gravy, serve on toast.

6. Escalloped Meat—Cut meat in cubes, add to gravy, place in baking dish with alternate layers of rice or dressing. Cover with bread crumbs and brown.

7. Shepherd's Pie—Same as meat pie, except that cover is of cold mashed potatoes.

8. Jellied Meat—Cold roast veal cut in cubes and added to a highly flavored gelatin stock. Mold, cool and slice.

9. Meat Fritters—Add ground meat to fritter batter and fry in deep fat.

10. Meat Sandwiches—Shredded cold roast or fowl.

Importance of Soup

In soup nothing is lost. Use odds and ends of meat, left over vegetables and bones from steaks and roasts. For seasoning add all water in which vegetables are cooked, the well washed parings of vegetables and water used to rinse out pans in which vegetables are cooked. The importance of a long cooking for soup is imperative.

PRESERVATION OF FOODS

Home Canning

1. Methods. A. Open-kettle or hot-pack method. This method is the oldest and commonly used method. It is suited to ordinary fruits, preserves, jam, etc. It is laborious and not suited for large quantities. It requires a complete cooking of the food products before packing or filling and sealing. As the packing is done after the sterilization has been done there is always possibility of spores and bacteria getting in before the can is finally sealed.

B. The Intermittent, or fractional-sterilization method. This method completely sterilizes and usually overcooks the products. It is laborious and requires a large amount of fuel and time.

C. Cold-water method. The cold water method is often used for canning acid fruits, gooseberries, cranberries, etc. It is satisfactory in canning rhubarb. The product should be well washed, placed on a strainer and scalding water poured over it, then packed at once in practically fresh jars, clean cold water being added until the jars are filled. Seal at once.

D. Vacuum seal method. This method requires the specially made vacuum seal jars. After the food has been blanched, cold dipped, and cooked enough to make it ready for table use it can be packed in the jars and a vacuum produced. When the jars and work of canning are flawless this methed can be successfully used.

E. Pressure cooker method. This method relies on the live steam to sterilize the products. This method requires less time for complete sterilization than any of the above methods—10 to 20 minutes with two to five pounds steam pressure for fruits.

F. Cold pack method. This is the most satisfactory known method. It is simple and can be used in preserving all kinds of products.

CANNING BY THE "COLD PACK" METHOD

(From Iowa State Agricultural Extension Department.)

All fresh fruits, vegetables and meats may be successfully canned by the "cold pack" method.

How It Is Done

There are two parts to the cold pack canning process:

Part I—Packing the uncooked product in the jar.

Part II—Cooking the packed product in a hot water bath.

This method is easily learned by anyone who will follow the directions carefully. Following are the steps of procedure:

1. Secure sound, fresh products.
2. Clean and trim the products.
3. "Scald" or "blanch" as directed.
4. "Cold dip" immediately.
5. Pack the product in the jar.
6. Add hot water or syrup.
7. Adjust rubber and cover on the jar.
8. Partially seal the jar.
9. Cook in hot water bath.
10. Remove from bath and complete the seal.

Equipment Needed

The ordinary home already has the equipment. The necessary articles are:

1. The regular fruit jars, including the screw top, glass top with wire bails, vacuum top jars and good rubbers which fit the jars used. Tin cans may also be used.

2. "Sterilizing vessels" for hot water bath. This may be a flat bottom kettle, a wash boiler, a lard can, a clean garbage can, a metal peck or half bushel measure, a pail, a milk can, or any other container deep enough to hold the jars set in a vertical position, with sufficient room below for water to circulate underneath the jars, and room above so that the jars may be covered by at least an inch of boiling water. The size of the vessel otherwise is governed by the amount of product to be sterilized each time.

3. A rack or "false bottom" to place in the bottom of the sterilizing vessel on which the jars may be set. This may be any kind of frame work that will hold the jars at least one-half inch above the bottom of the kettle to permit free circulation of water under the jars and prevent jars from coming in direct contact with the heated

bottom of the kettle. A piece of stiff wire netting cut to fit the container, with the edges beaten down, a wire tea stand, or a rack made by fastening some wire netting to two small cross pieces do very well. A piece of stiff woven wire, fastened to a metal rim, makes an excellent false bottom.

4. One vessel for hot water, into which the product may be lowered for scalding or blanching.

5. One vessel for cold water, into which the product may be lowered for the "cold dip."

6. A jar lifter for placing and removing jars from hot water bath. This may be a piece of heavy wire, a fork, or other device with the lower end turned so as to slide under the edge of the jar.

7. Other kitchen equipment ordinarily used in preparing the product. A wire basket or piece of cheese cloth or thin muslin may be used for blanching or scalding the product. Plenty of clean, hot water should be available. Use the kitchen stove or other means provided for home cooking. Use the equipment you have unless you find it pays, as a matter of convenience or speed, to devise or secure something else.

NO PRESERVATIVE NEEDED—No canning powder, vinegar, salt, sugar or any other preservative is needed. If the product is cooked in closed jars in the hot water bath as directed, the food will be sterilized so that it will keep indefinitely. If it is desired to flavor the product by adding some salt, sugar syrup, vinegar or other flavor, this may be done when the product is packed in the jar.

Procedure

1. SELECT SOUND, FRESH, RIPE PRODUCT—Take the product directly from the garden, field or orchard. Avoid using a product which has been gathered more than five or six hours.

2. CLEAN AND TRIM THE PRODUCT—Clean it as you would for use. That is, remove skins, pits, cores, seeds, roots. silks and trim pods; cut in halves, fourths, eighths, in cubes, or can whole, as you may want to have the product when it is to be used.

3. SCALD OR BLANCH—To "scald" means to immerse the product in boiling water a very short period to loosen the skin. "Blanching" means to immerse the product in boiling water for a longer period to reduce bulk, remove objectionable acids or flavors, and help with sterilizing. Tomatoes and peaches should be scalded only long enough to loosen the skins. The degree of ripeness and other conditions of product determine the time necessary. The time table gives approximate time for scalding and blanching different products.

HOW—Have a kettle of boiling water handy. Place product in wire basket, thin towel, or cheese cloth; lower in boiling water. Remove promptly as indicated by time table for blanching, or when skins are loosened in scalding. If scalded or blanched too long, the products will be too much cooked for best results. The "cold dip" follows immediately.

4. COLD DIP IMMEDIATELY—To "cold dip" lower the product immediately from the hot water into cold water. The cold dip helps to separate the skin from the product, helps to keep the coloring matter, firms the texture. The sudden change from hot to cold helps to destroy bacteria and spores and cools the product so it is easier to handle. Remove product from cold dip at once.

5. PACK PRODUCT IN THE JAR—The jars, tops and rubbers should all have been made ready so that product can be packed in immediately. It is best to have glass jars hot so they will be properly tempered to go into the "hot water bath" as soon as packed. Be sure that the rubbers and tops are good ones and that there are no rough, uneven edges where the sealing takes place. between the jar and the top. Pack products well so as to have a well filled jar when completed.

6. ADD HOT WATER AND SYRUP—After the product is packed in the jar, complete the filling of the jar by pouring in hot water or syrup. Generally, hot water is used with vegetables and syrup with fruits. except with tomatoes, when no liquid is needed. Water may be used with fruits if desired. The syrup is made by dissolving sugar in water and bringing to a boil. The proportion of sugar to water is governed by the taste. The syrup is really a seasoning to be determined by the flavor desired.

7. ADJUST RUBBER AND COVER—Place rubber; see that it lies flat and fits well. Place cover; be sure rubber and top are good ones.

8. DO NOT COMPLETELY SEAL GLASS JARS—With screw-top jars, screw cover on, then turn cover back just a little (about one-half inch) just enough to loosen it so that when heated the steam may escape. With spring sealing jars, have top spring in place, but leave the side to hold it on. The spring will release the cover enough to allow for escape of steam. If covers are too tightly adjusted, expansion from heating may blow the rubber out or break the jar.

9. THE "HOT WATER BATH"—As soon as the jar is packed and partially sealed, place it immediately in the hot water bath for sterilizing. There is advantage in having the water in the bath boiling when jars are set in. If they have been filled with boiling water or hot syrup, no breakage will occur. Use good judgment in this. If jars seem not hot enough to place in hot water bath immediately without danger of breakage, set them first in warm water to temper them.

Cook products as per time table. Do not begin counting time until the water is at a jumping boil. If undercooked, the product will not keep; if overcooked, the product may lose flavor, color and texture.

10. REMOVE FROM BATH AND SEAL—As soon as the product has cooked at a boiling temperature the number of minutes indicated by the time table, remove the jar from the bath, examine rubbers and

complete sealing the jar. Screw top down, put clamp down, or otherwise complete the seal according to the kind of jar used.

Protect glass jars from draft when removing from bath to avoid breakage. Set jars where they will cool without disturbance until seal sets.

CAUTIONS—Follow directions faithfully. Be sure to completely sterilize the product. Be sure of a perfect seal. Use good judgment all the time and you will have a superior canned product that will keep indefinitely.

CANNING CLUBS, CANNING RECIPES, INFORMATION — Inquire of your county club leader, county agent, county superintendent of schools, or write to the agricultural extension department of your state, for information concerning organization of canning clubs and the circulars giving canning recipes, instructions and complete directions for canning club work by the "cold pack" method.

CANNING SYRUPS

Thick syrup is that which has become so thick that it is difficult to pour out of a spoon or container, but is not sugared (density from 50 to 64 per cent).

Thin syrups are used for all sweet fruits that are not too delicate in texture and color, such as cherries, peaches, apples, etc. Medium-thin syrups are used in the canning of the medium-sweet fruits, such as blackberries, currants, dewberries, huckleberries, raspberries, etc. Medium-thick syrups are used in the canning of all sour fruits, such as gooseberries, apricots, sour apples, etc., and delicately colored fruits, such as strawberries and red raspberries. Thick syrup is used in preserving and making all kinds of sun-cooked preserves.

CANS PER BUSHEL OF VARIOUS FRUITS AND VEGETABLES

The following table shows the number of cans that can be filled per bushel of various fruits and vegetables:

PRODUCT (one bushel)	No. 2 cans (pints)	No. 3 cans (quarts)
Windfall apples	30	20
Standard peaches	25	18
Pears	45	30
Plums	45	30
Blackberries	50	30
Windfall oranges (sliced)	22	15
Windfall oranges (whole)	35	22
Tomatoes	22	15
Shelled lima beans	50	30
String beans	30	20
Sweet corn	45	25
Shelled peas	16	10
Sweet potatoes	30	20

TIME TABLE

For Scalding or Blanching, and for Sterilizing, in "Cold Pack" Canning

PRODUCTS	Scald or Blanch	Cook in Hot Water Bath at Boiling Temperature
FRUITS—	Minutes	Minutes
Apples	1½	20
Apricots	1 to 2	16
Blackberries	No	16
Cherries	No	16
Currants	No	16
Gooseberries	No	16
Grapes	No	16
Peaches	1 to 2	16
Pears	1½	20
Pineapple	10	30
Plums	No	16
Raspberries	No	16
Rhubarb	No	10 to 16
Strawberries	No	8 to 16
GREENS, ROOTS, TUBERS—		
Asparagus	2 to 4	90
Beets	6	90
Cabbage or Sauerkraut	6 to 15	90
Carrots	6	90
Cauliflower	3 to 6	90
Dandelions	10 to 15	90
Greens, all other kinds	10 to 15	90
Parsnips, Turnips, etc	6	90
Pumpkin	X	60
Spinach	10 to 15	90
Squash	X	60
Sweet Potatoes	6	90
OTHER VEGETABLES—		
Beans (Lima or String)	2 to 5	120
Corn (on cob or cut off)	5 to 15	180
Peas	2 to 5	120
Tomatoes	1 to 3	22

X. First cook thirty minutes in open kettle to reduce bulk.

IMPORTANT CANNING SUGGESTIONS

Facts for Home Canning

(Prepared by O. H. Benson, in charge Boys' and Girls' Club Work, North and West, U. S. Ext. Dept.)

Do not combine two recipes or two sets of instructions in canning. To do so means to fail.

Remember that adequate heat, plenty of clean water, and complete sterilization are absolutely necessary.

The cold pack method of canning does not mean that the canning is done without heat, but simply means that the final sterilization is done after the jar or can has been completely filled, the rubber and cap put in place, or the tin can completely sealed.

When using glass jars always utilize the jars on hand, but when it is necessary to buy new jars, buy the best. They are the cheapest in the long run. No glass jar with metal or rubber in direct contact with the food product is desirable unless the cap is enameled, lacquered or vulcanized. Glass jars should be thoroughly cleaned and should be taken directly from hot water to be filled.

In coring, peeling and slicing apples, drop the apple product into a vessel containing cold, slightly salted water, in order to keep it from discoloring before packing.

Canned products in glass jars if exposed to light will bleach, fade and sometimes deteriorate in food value, hence the necessity of wrapping in paper.

If vegetables and greens are blanched in a steamer and then plunged into cold water, it is perfectly safe to use tin cans; however, enameled or lacquered cans are always the safest.

Do not can rhubarb in tin cans unless at least a 35 per cent density syrup and enameled cans are used.

Products canned in tin should be emptied into glass, porcelain, china or stoneware as soon as the can is opened.

Pack the jars and tin cans thoroughly, but avoid the overpacking of tin cans with products such as corn, peas and lima beans, as all of these expand somewhat during sterilization.

Avoid using too much salt in the canning of vegetables, greens, tomatoes and sweet corn. A little sugar added before sterilization will improve the product and sometimes shorten the time required for processing.

Avoid destroying the vegetable or volatile oils in products such as greens, cabbage, brussels sprouts and cauliflower when canning, but be sure to eliminate the excessive acids. This is done by blanching the product in a steamer or large dishpan (over a false bottom), with just a little water beneath the greens.

In canning windfall apples whole, sliced or quartered, remember that they must be sterilized enough to keep, but avoid overcooking, which reduces the product to apple sauce or discolors the pulp.

An adequate supply of convenient and efficient canning equipment is important to success.

In using steam pressure outfits, remember that too much pressure injures the quality of all food products.

Begin the canning work with a small quantity of one product the first day. Take time to do the work well, then test the products before canning a large quantity.

Standardize the products, and if they are to be marketed, protect the standard and the trade mark faithfully from year to year, through a uniform and reliable product. All canned goods offered for sale should be carefully labeled in accordance with the requirements of state and federal food laws.

In many instances it is important to can with a home made outfit first, in order later to be in better position to determine what kind of outfit best meets individual needs.

Business organization and management is nowhere more important than in canning operations. The proper placing of tables with relation to canner, water, fuel and supply of vegetables and fruits, the arrangement of utensils, and the system with which the canning work is executed are all essential matters.

CANNING MEAT

(From New York State Agricultural Extension Department.)

METHOD I—Free the meat from the bone, and cut it in pieces of such a size that they will go into the jars easily. Pack the raw meat solidly into tested clean glass jars, filling the jars to within three-fourths inch from the top. Sprinkle over the top of the meat one-half teaspoonful of salt for each pint of meat. Add no water. Celery leaves, onion, pepper or other seasonings may be added if desired. Adjust on the jar a new rubber of good quality. Place the cover on the top of the jar, and adjust, but do not fasten, the upper wire clamp, or if a mason jar is used, partly screw on the cover. Place the jars on a rack in a tightly covered container, such as a wash boiler or a sap bucket, in which there is warm water that reaches to within about one inch from the tops of the jars. Sterilize the meat by cooking it for from four to five hours, beginning to count the time when the water around the jars reaches the boiling point. A steam cooker is particularly convenient for this process, and a pressure canner reduces the sterilization period, but a wash boiler or a sap bucket answers the purpose satisfactorily. Before removing the cans from the sterilizer, complete the sealing of each jar by adjusting the lower wire of the clamp or, in the case of a mason jar, by screwing the top tight. Keep the jars in a cool, dark place.

METHOD II—Sear the meat in a hot oven, in hot fat, or in boiling water, and steam it or simmer it until it can be torn apart. Pack the meat into the jars, fill the space with stock, and add one-half teaspoon salt to each pint of meat. Sterilize the meat for three hours as

in Method I. Unless the meat is first browned, it does not have so good a flavor as that of raw meat steamed in the can.

Canned Chicken

Chicken may be successfully canned by either of the two methods suggested. Canning surplus cockerels that have reached the proper size does away with the necessity of feeding and caring for them during the winter months. A fowl weighing two pounds when dressed should make a pint can of solid meat and a pint of stock thick enough to jelly. A fowl weighing three pounds should fill one and one-half pint can.

Chicken Stock

All bones and trimmings of the chicken should be covered with cold water, salted, and slowly simmered until the flesh drops in shreds from the bones, and the liquid, or stock, is concentrated. Seasoning, such as onion and a bit of celery leaf, may be added. Strain the stock, if desired, reheat it, and boil it for ten minutes. Pour it into sterilized jars, and sterilize it as described under Method I for one hour on each of two successive days.

HOME DRYING

(a) SUN DRYING. This method is effective but slow, and entails considerable work before product is thoroughly dry. After fruit or vegetables are cleaned and all imperfections are removed the product should be sliced or reduced to small particles in order to expose surface for the escape of moisture. After drying pile up and allow to "sweat," thus equalizing moisture, then spread out and dry again. Pack in boxes and keep in cool place.

(b) FAN DRYING. This method is rapid and effective, and reduces the labor to a minimum. Instead of using one large frame, several small frames, with wire netting (screen) bottoms, piled one upon another are used. Each frame should be as wide as the diameter of the fan used, and about three feet long by three inches deep. Pile three to six deep. The ends at which the fan is placed should be open to make possible the passage of the air in currents over the product. An electric fan of large diameter is probably the most efficient means of applying this method. Home made fans attached to gasoline engines are easily provided and may be quite as effective as electric power. The chief aim is to cause a strong current of air to pass across the product. Fruits should be thinly sliced and vegetables should be reduced to very small slices or pieces before applying the air. This method requires only twelve to twenty-four hours to effectively reduce the weight and bulk of the product by evaporation. About 90 per cent of the moisture should be taken out. After thorough drying seems to have been accomplished, it is well to place product in sealed jars or containers and keep in cool, dry place. The drying processes preserve all the flavor and nutriment, and if conducted properly are the cheapest and most satisfactory way to preserve foods.

(c) HEAT DRYING. This method has been conducted successfully with all kinds of products. The plan is to apply heat either by placing the product in oven or above the stove. Rapid or intense heating modifies the flavor of the product. Slow application of heat by placing racks or frames above very slow fire is effective with some kinds of fruits [as apples] and is not an unusual method in drying green corn. Frequent stirring and moving may be necessary to prevent scorching.

HOME STORAGE

(U. S. Ext. Dep't.)

The Keeping of Vegetables, Fruits and Meats

The following hints regarding the keeping of different kinds of food may be found useful:

Potatoes are kept without difficulty in a cool, dry and dark place. Sprouts should not be allowed to grow in the spring.

Such roots as carrots, parsnips and turnips remain plump and fresh if placed in earth or sand filled boxes on the cellar floor.

Sweet potatoes may be kept until January if cleaned, dried and packed in chaff so that they will not touch each other.

Pumpkins and squash must be thoroughly ripe and mature to keep well. They should be dried from time to time with a cloth and kept, not on the cellar floor, but on a shelf, and well separated from each other.

Cabbages are to be placed in barrels, with the roots uppermost.

Celery should be neither trimmed nor washed, but packed, heads up, in long, deep boxes, which should then be filled with dry earth.

Tomatoes may be kept until January if gathered just before frost, wiped dry, and placed on straw covered racks in the cellar. They should be firm and well grown specimens, not yet beginning to turn. As they ripen they may be taken out for table use, and any soft or decaying ones must be removed.

Apples, if for use during the autumn, may be stored in barrels without further precaution than to look them over now and then to remove decaying ones; but if they are to be kept till late winter or spring they must be of a variety known to keep well, and they must be hand picked and without blemish or bruise. They should be wiped dry and placed with little crowding on shelves in the cellar. As a further precaution, they may be wrapped separately in soft paper.

Pears may be kept for a limited time in the same way, or packed in sawdust or chaff, which absorbs the moisture which might otherwise favor molding.

Oranges and lemons are kept in the same way. Wrapping in soft paper is here essential, as the uncovered skins if bruised offer good feeding ground for mold. Oranges may be kept for a long time in good condition if stored where it is very cold, but where freezing is not possible. Lemons and limes are often kept in brine, an old fashioned household method.

Cranberries, after careful looking over to remove soft ones, are placed in a crock or firkin and covered with water. A plate or round board placed on top and weighted serves to keep the berries under water. The water should be changed once a month.

In winter large pieces of fresh meat may be purchased and hung in the cellar. Thin pieces, as mutton chops, are sometimes dipped in mutton suet, which keeps the surface from drying and is easily scraped off before cooking.

Turkeys, chickens and other birds should be carefully drawn as soon as killed and without washing hung in the coolest available place.

Smoked ham, tongue, beef and fish are best put in linen bags and hung in the cellar.

Salt pork and corned beef should be kept in brine in suitable jars, kegs, or casks, and should be weighted so as to remain well covered. A plate or board weighted with a clean stone is an old fashioned and satisfactory device.

Eggs may be packed for winter use in limewater or in water-glass solution, methods which are described on an earlier page. Many housekeepers have good success in packing them in bran, in oats, or in dry salt, but according to experiments the preference is to be given to the 10 per cent solution of water glass. Exclusion of the air with its accompanying micro-organisms and the prevention of drying out are what is sought in all cases. Packed eggs are not equal to fresh eggs in flavor, but when they are well packed are of fairly good quality and perfectly wholesome.

Storage of Groceries, Meats, Cooked Food and Canned Goods

Flour comes packed both in barrels and in bags, and the form in which it shall be purchased and kept is of importance to the housewife. Bags have certain advantages over the barrel for both producer and consumer; they pack into freight cars with no waste of space, and the cloth for eight bags costs less than one barrel; for the consumer, also, it is often convenient to buy in small quantities. But. on the other hand, the bag is too often very flimsy in texture, so that it allows flour to sift out, and is also easily soiled by contact with a damp or dirty floor. The purchaser may well require that the bags be made of good material, so that the contents may be protected from dust and dirt.

The various prepared or "self rising" flours are more expensive than the mixture that the housewife can easily make by adding the requisite amount of baking powder to flour and sifting it several times. It is a convenience and a saving of time to keep this mixture on hand, as one sifting provides enough for a month's use in cakes and muffins.

The fact that many breakfast cereals that were once sold only in bulk can be bought in packages is a great advantage from a sanitary point of view. The contents of these packages, if bought fresh and if well cared for, will remain in good condition for months. If made

in clean factories, such goods have had little chance for contamination from dust and dirt.

If breakfast cereals are bought in bulk they should be kept in tight receptacles in a cool, dry place. Crackers may be kept like breakfast cereals, either in the package, in which many sorts are marketed, or in tin boxes or in jars.

Cornmeal spoils more readily than flour. and for most families it is best to buy in small quantities.

Rice, tapioca, macaroni and similar dry materials may be kept without any trouble in covered cans or small crocks in a dry, clean place. The same method is advisable for raisins, Zante currants, evaporated and dried fruits and similar supplies.

Sugar and salt are best kept, the former in tin, the latter in wooden or crockery receptacles.

Glass preserve jars are perhaps the best and most convenient of all containers for small quantities of almost any food material.

Bread and Other Cooked Foods

While cooling, newly baked bread should be lightly covered with a clean cloth or paper to prevent mold germs and dust from falling upon it, but should not be tightly wrapped in a thick cloth as is the practice in some households, for unless it is aired when taken from the oven, it is likely to become "soggy" and damp and thus offers an excellent medium for cultivation of molds. When perfectly cold the bread should be placed in a close receptacle that has been thoroughly scalded and aired. If bread is to be kept for more than two or three days in damp, hot weather, the jar or box should be taken out and sunned for a short time now and then, and again scalded and dried. On no account should portions of a former baking be stored with a new batch.

Cake and cookies should be cooled after baking and kept in tin boxes or in earthenware jars, which, like bread boxes, should be often scalded and aired. Even if these foods are to be eaten at the next meal it is well to keep them in some such receptacle, as it insures protection from dust. A cake, pudding or pie put out of a window uncovered to cool or in any other place where it is exposed to dust, and in summer also to flies, is something that no careful housewife would place on her table if she stopped to think how easily the food may be contaminated.

Canned Fruits and Other Canned Goods

Commercial canned goods may be advantageouly bought by the dozen in the autumn, and they do not seem to suffer from even a poor storage place, provided it is not so damp that the cans rust through. If dirty or dusty, the cans should always be carefully wiped before they are opened to prevent accidental soiling of the contents.

Vegetables and fruits canned at home, and home made jellies, jams and similar foods should be kept in dry, airy storage places, out of direct light.

Canning may also be made use of daily for temporary preservation of food, and it is especially valuable where ice chest facilities are not good. When making soup stock a large quantity is made as easily as a small, and the surplus may be poured, while hot, into fruit jars and sealed. Boiled milk may be thus canned, and cooked vegetables which may be at the time plentiful or cheap. Mince meat may also be canned, but it will keep a long time in an ordinary receptacle if melted suet be poured over the top.

JELLY MAKING

(From the Uni. of Neb. Agric. Ex. Service.)

METHOD OF JELLY MAKING—Extract the fruit juice by boiling the fruit, since most of the pectin is not extracted from fruit unless it is heated. Boil juice one-half the time of boiling; that is, if ten minutes are allowed for currant jelly, then boil juice five minutes before adding sugar. The juice should not simmer on the back of the stove, because long heating destroys the pectin or jellying power. After boiling the juice one-half the time, add sugar, heated or warmed in oven, and finish cooking. Sugar should be warmed, because if it is added cold it will cool the fruit juice and thus make necessary longer cooking and less certain results.

In making jelly use only three-quarters of cup of sugar to the cup of juice (if it contains pectin) and you will get a perfect jelly that will "stand." The old rule, "cup for cup," is necessary when using very green fruits as under-ripe grapes or currants. (To test juice for "pectin" add to one tablespoon of the juice an equal amount of alcohol and if a gelatinous mass results pectin is present. To add pectin to fruit juice cook the juice with the white inner skin from oranges or lemons (both of which are rich in pectin) Then test juice again.

A jelly test may be made by dropping jelly from a spoon. If it sheets off it is ready to be put in jelly glasses. Another test is the formation of two drops, broad at the base, formed simultaneously on the side of a tablespoon. These are quicker tests than putting a teaspoonful of jelly in a saucer to cool. By the time the jelly has cooled it may have boiled beyond the proper stage. When the jelly test is obtained it should be poured immediately into glasses. When cool it should be covered with paraffine and paper or tin cover. The best results have been obtained by cooking only small quantities of jelly at one time—four to six glasses.

Fruit juice may be extracted more than once. With grapes and currants, especially, it will pay to make two extractions of juice. The resulting jelly is about the same as jelly made from the first extract. To make the second extract, cover with water the pulp left after the first draining and let boil one-half hour. It is well to test the juice as suggested above to determine the amount of pectin.

Jelly failures are due to a lack of pectin or acid, too much sugar, or too much water. Test your fruit juice for pectin, and if you find

it lacking add apple juice or juice made by boiling the rind of lemons or oranges. Jelly failures are also due to too long cooking of juice or allowing it to simmer instead of boil. Avoid an overuse of sugar, for if too much has been added longer cooking will never make the juice jelly.

PRESERVING FRUIT

In the case of most fruits, canning with a little sugar is to be preferred to preserving with a large quantity of sugar. There are, however, some fruits that are only good when preserved with a good deal of sugar. Of course, such preparations of fruit are only desirable for occasional use. The fruits best adapted for preserving are strawberries, sour cherries, sour plums, and quinces. Such rich preparations should be put up in small jars or tumblers.

Recipes

PART TWO

Economical Recipes

[NOTE—In the compilation of the following recipes the order and arrangement of the groups and subjects has not been undertaken with the intention of supplying a complete or exactly balanced collection of food recipes. The aim has been first to furnish the most practical ideas on the several subjects and to provide from the given sources the best examples of the food combinations. The list, though incomplete, gives many valuable and economical recipes, and great credit is due the home economics departments from which they come.—R. A. H.]

COMPARATIVE MEASURES AND WEIGHTS.

Accuracy of measurement is necessary for accuracy in all processes of food preparation. The following comparisons of quantities may prove useful to the housewife (all measurements are taken level):

3 teaspoonfuls make 1 tablespoonful.
16 tablespoonfuls (dry material) make 1 cupful.
14 tablespoonfuls (liquid) make 1 cupful.

It is equally desirable to know the equivalent weights of the measurements called for:

2 cupfuls butter packed solidly	1 pound
2 cupfuls sugar	1 pound
2 cupfuls meat finely chopped	1 pound
2 2/3 cupfuls powdered sugar	1 pound
2 2/3 cupfuls brown sugar	1 pound
2 2/3 cupfuls oatmeal	1 pound
4 3/4 cupfuls rolled oats	1 pound
4 cupfuls flour	1 pound
9 or 10 eggs	1 pound
2 tablespoonfuls butter	1 ounce
4 tablespoonfuls flour	1 ounce
1 egg, slightly beaten	4 tablespoonfuls
1 lemon (juice)	3 tablespoonfuls

DEMONSTRATION—BREAD LESSON

(From Iowa State College, Home Economics Dept.)

Bread Judging

BREAD SCORE CARD

Flavor	20
Quality of crumb	20
Porosity of grain	20
Lightness	15
Sweetness	10
Color	5
Crust	5
Shape and size	5
	100

Explanation of Score Card

FLAVOR—The flavor of your bread should be something like the flavor of freshly cracked nuts. It should not taste of yeast and it should not taste sour or musty.

QUALITY OF CRUMB—Cut the bread through the middle of the loaf lengthwise. Press it lightly with the finger. The bread should be soft enough to press easily, but the dent should spring back to the level surface. If the dent stays in the bread, your loaf should lose ten points on doughiness and moisture. If the bread is so hard that you cannot press it easily, you will know that you have used too much flour in mixing it, or it has baked too long.

POROSITY OF GRAIN—Bread should have a fine grain and should have no large holes in it. The holes should be of equal size all through the loaf.

LIGHTNESS—Bread should be equally light all through. There should be no heavy spots or streaks anywhere.

Sweetness—Bread should have no sour smell or taste.

COLOR—Bread should be a good cream color. It should not be grayish or greenish in color.

CRUST—The crust should be a golden brown on top and bottom. It should be evenly browned and not more than one-eighth inch thick.

SHAPE AND SIZE—The loaf is more easily baked in a pan that is about ten inches long, four inches wide and five inches high. This makes a fine looking loaf that is not too large to bake well. The loaf should rise evenly and be of uniform height in all parts. It should not rise enough to bulge over the side of the tin.

WHITE BREAD—Two cups scalded milk (or half milk and half water or two cups water); two tablespoonfuls lard or butter, one tablespoonful sugar, one teaspoonful salt, one-fourth yeast cake dissolved in one-fourth cup lukewarm water, six cups flour (about).

Dissolve yeast cake in one-fourth cup lukewarm water. Scald the milk. Place sugar in a bread bowl. Add the hot milk. Wait until the milk is lukewarm and add the dissolved yeast cake. Begin to add flour gradually and beat thoroughly as the flour is added. Beat out all the lumps and make the batter look smooth and shining. Add flour until batter is like pancake batter. Let rise until it is full of bubbles. Add salt and melted shortening. Add flour to make a smooth, elastic dough that can be handled without sticking. Too much flour will make the bread hard. This bread may be made by setting a hard loaf at first, but it must rise three times before baking and the grain is improved by letting it rise a fourth time.

RISING—Place the bread in a bowl and cover with a towel. Keep warm, never hot and never cold. Heat kills the yeast plants and cold makes them grow so slowly that the bread will not have a good flavor. Let the bread rise until it has doubled its bulk. If the bread is allowed to rise too long a time it will become sour.

KNEADING—Knead lightly with a quick rolling motion of the hands. Continue kneading until the dough is elastic and until you hear a snapping, cracking sound in the dough. Long kneading makes an elastic, fine grained bread.

MAKING INTO LOAVES—Take the dough from the bowl, knead it lightly for a few minutes without adding flour, divide it into two equal parts. Knead each portion until a smooth, firm loaf is made to fit an oblong pan that is about 4x5x10 inches in size. Set the loaves in a warm (not hot) place and allow them to double their size. Best temperature 75 to 85 degrees F.

BAKING—The oven should be hot enough to brown a teaspoon of flour a light yellowish brown in five minutes. A loaf of this size should bake about fifty minutes and the oven should be cooler during the last fifteen minutes than during the first five minutes. When the bread is done, it should be an even golden brown color, all over the outside. The inside of the loaf should be soft but should be firm enough to spring back when you make a dent in it with the finger. If the dent does remain where you make it, you may know that your bread has not been baked enough.

CARE AFTER BAKING—Take the loaf from the pan and set it on bread cooler and cover lightly to allow the steam to escape. Brush the crust with milk or melted butter, if you wish.

BATTERS AND DOUGHS—Quick bread mixtures are either batters or doughs. 1. Batter is a mixture of flour and liquid, thin enough to be beaten. A pour batter, or thin batter—one measure of liquid to one measure of flour (popover). A drop batter—one measure of liquid to about two measures of flour (muffins, fritters, cake). II. A dough is a mixture of flour and liquid stiff enough to handle on a board. Soft dough—one measure to 2 2/3 measures of flour (biscuit, doughnuts).

Stiff dough—one measure of liquid to 3 1/2 or more measures of flour (bread).

GENERAL DIRECTIONS FOR MIXING BATTER AND DOUGHS —1. Mix and sift dry ingredients. 2. Measure liquid ingredients. 3. Add the liquid to the dry ingredients. 4. Use two level teaspoonfuls baking powder to one cupful flour when no eggs are used. 5. If eggs are used less baking powder will be required. 6. Baking powder mixtures should be handled as little as possible and baked in a hot oven.

BAKING POWDER—1. Composition, acid, alkali, corn starch. 2. Proportions, one-half acid, one-fourth soda, one-fourth corn starch.

One teaspoonful baking powder equals one-fourth teaspoonful of soda, one-fourth teaspoonful corn starch, one-half teaspoonful cream tartar.

QUICK BREADS

BAKING POWDER BISCUIT—Two cups flour, four teaspoonfuls baking powder, one teaspoonful salt, one and one-half tablespoonfuls butter, one and one-half tablespoonfuls lard, three-fourths cup milk or water.

Sift dry ingredients together. Chop in shortening or work it in with tips of fingers. Moisten to a soft dough with milk or water. Turn on to floured board. Handle as little as possible, roll about one-fourth inch thick and shape with biscuit cutter. Bake twelve to fifteen minutes in hot oven.

FRUIT PUFFS—Two cups flour, 4 teaspoonfuls baking powder, one-half teaspoonful salt, 4 tablespoonfuls butter or lard, two-thirds cup milk or water, four tablespoonfuls finely cut dates or figs, four tablespoonfuls chopped nuts, four tablespoonfuls sugar, one-half teaspoonful cinnamon, two tablespoonfuls butter.

Mix first five ingredients as for baking powder biscuit and pat out into a sheet (one-half inch thick) on a board. Spread with butter (melted) and sprinkle with sugar, nuts, cinnamon and fruit. Roll as for cinnamon roll and cut into eight pieces. Flatten on greased tin and bake in a hot oven. (These puffs may be served as a pudding with a lemon sauce).

KENTUCKY BISCUITS—One cup bread spongue, two tablespoonfuls butter, two tablespoonfuls sugar, one beaten egg, one teaspoonful salt, flour.

Knead into a soft loaf, and allow to double its bulk. Shape into rolls and allow to rise again. Bake in a hot oven.

BOSTON BROWN BREAD—One cup corn meal, one cup graham flour, one cup rye meal, one teaspoonful salt, three-fourths cup Porto Rico molasses, two clups sour milk, three-fourths tablespoonful soda.

Sift the dry ingredients together, add sour milk and molasses. One

cup chapped raisins may be added of desired. Steam three or four hours.

QUICK BREAD STICKS—One-fourth cup buttermilk, one-eighth teaspoonful soda, one-half teaspoonful salt, three-fourths tablespoonful butter, flour to make stiff dough.

Mix buttermilk with salt, soda and fat. Add flour knead on board till it does not stick. Roll one-third inch thick. Cut into long narrow strips. Bake on sheets. When they begin to rise, turn down heat.

QUICK COFFEE BREAD—Two cups flour, two tablespoonfuls granulated sugar, one-fourth teaspoonful salt, two teaspoonfuls baking powder, one-faurth cup butter, one egg, two-thirds cup milk, one-third cup almonds (blanched and shredded), 3 tablespoonfulls melted butter, 3 tablespoonfuls sugar, ane-half teaspoonful cinnamon.

Sift dry ingredients and work in the butter. Beat the eggs, add the milk, and stir into the dry ingredients. Turn into a shallow buttered pan and spread the dough evenly in the pan. Press the almonds into the top of dough. Brush over with melted butter, dredge with the sugar and cinnamon, and bake about twenty-five minutes.

GOLDEN CORN CAKE—Three-fourths cup corn meal, one and one-fourth cups flour, one-fourth cup sugar, five teaspoonfuls baking powder, one-half teaspoonful salt, one cup milk, one egg, two tablespoonfuls melted butter.

Mix and sift i dry ngredients; add milk, egg well beaten and melted butter; bake in a shallow buttered pan in hot oven twenty minutes.

SPANISH BUNS—One-half cup butter, two cups white sugar, yolks of four eggs, one cup sour milk, one teaspoonful soda, two and a half cups flour, one teaspoonful cloves, one teaspoonful nutmeg, one teaspoonful cinnamon, one cup raisins, whites of four eggs.

Cream the butter, add sugar gradually, yolks of eggs well beaten. Mix dry ingredients, add raisins and add alternately with sour milk to first mixture. Fold in the beaten whites. Bake in gem pans. about twenty-five minutes.

Quick Breads

(Uni. of Neb., Domestic Science Dept.)

BRAN MUFFINS—One cup flour. one teaspoonful soda, one-half cup molasses, one-half cup nuts, one and one-fourth cups milk, one egg, two cups bran, one teaspoonful salt, one-half cup raisins.

Mix and sift the flour, soda and salt. Add the bran, milk, molasses and egg well beaten. Bake in buttered gem pans.

NUT BREAD—One cup sugar, two teaspoonfuls salt, two cups whole wheat flour, eight teaspoonfuls baking powder, two cups milk, two cups white flour, two eggs, one cup nut meats, one-half cup currants.

Mix the dry ingredients add the nuts and currants. Beat the eggs and milk together and combine. Bake as above.

QUICK BROWN BREAD—Two cups sour milk, two eggs, two teaspoonfuls soda, one cup raisins, one teaspoonful salt, two-thirds cup molasses, three cups graham flour, one cup white flour.

Add soda to sour milk, add molasses and eggs, sift in dry ingredients. Add the raisins. Bake slowly one hour.

CHEESE BISCUITS—Two cups flour, five teaspoonfuls baking powder, one teaspoonful salt, one-half cup grated cheese, one tablespoonful butter, one tablespoonful lard, three-fourths cup milk.

Sift dry ingredients, cut in shortening and cheese, add milk. Roll one-half inch thick, cut with biscuit cutter. Bake in a moderate oven.

CORN MUFFINS WITH DATES—One cup corn meal, one cup white flour, one-half teaspoonful salt, two tablespoonfuls melted butter, four teaspoonfuls baking powder, one tablespoonful brown sugar, one egg well beaten, one-ralf cup chopped dates.

Sift dry ingredients add egg, milk and dates. Bake in a hot oven.

SWEDISH ROLLS—Two cups flour, one-half teaspoonfud salt, four teaspoonfuls baking powder, three tablespoonfuls butter, one egg, three-fourths cup milk, one tablespoonful sugar, one-half teaspoonful cinnamon, one-half cup currants or raisins.

Mix as cream cones, then roll into a rectongular sheet one-fourth inch thick. Spread the sheet with softened butter, then sprinkle with sugar, cinnamon and raisins. Roll up as a jelly roll and cut into pieces nearly an inch in thickness. Bake on a buttered tin about eighteen minutes.

SOUR MILK CORN BREAD—Two cups corn meal, two cups sour milk, two tablespoonfuls butter, two tablespoonfuls sugar, one and a half teaspoonfuls salt, two eggs, one teaspoonful soda.

Mix dry ingredients, add milk, then eggs well beaten, and melted butter. Bake in a shallow pan for thirty minutes. Cut in squares.

EGGLESS CORN BREAD—One and a half cups corn meal, two-thirds cup white flour, one-half cup sour cream and one and a half cups sour milk, or two cups thick, sour milk and one-third cup lard, one teaspoonful soda, one and a half teaspoonfuls salt.

Prepare by method given above.

SPOON CORNBREAD—Two cups water, one cup milk, one cup white corn meal, one tablespoonful butter, two eggs, two teaspoonfuls salt.

Mix water and corn meal and bring slowly to boiling point and cool five minutes. Add eggs well beaten and other ingredients. Beat thoroughly and bake in a well greased pan twenty-five minutes in a hot oven. Serve from the same dish with a spoon.

YEAST BREADS

(Uni. Nebr., Dom. Sci. Dept.)

WHITE BREAD—Allow the yeast to soak for three hours in a cup of lukewarm water to which one teaspoonful sugar has been added. Into the mixing bowl place one-half cup flour and scald with one and a half pints potato water. Add to this two medium sized potatoes, which have been well mashed, and enough flour to make a soft sponge. When lukewarm add yeast. Keep moderately warm all night. In the morning add to the above sponge one pint scalded milk, when it has cooled to blood heat, in which the following have been dissolved: one-half cup sugar, one and a half tablespoonfuls salt, two tablespoonfuls lard. Add flour to make a stiff dough, let rise until double in size, knead down, let rise again, knead down and form into loaves. Allow the loaves to double in bulk, and bake for one hour. Never grease the pan in which the dough is placed to rise.

SWEET RUSK ROLLS—In the morning take one pint of the sponge as described above, add one egg, one-half cup sugar, and two tablespoonfuls melted butter. Add flour to make a soft dough, let rise until double in bulk, then doll into long, slim rolls, about six inches long, grease, and tie into loose knots. Allow to rise until very light, and bake about thirty to forty minutes. On removing from the oven rub the top with butter.

RYE BREAD—One cup milk, one cup boiling water, one tablespoonful lard, one tablespoonful butter, one-third cup brown sugar, one and a half teaspoonfuls salt, one-fourth yeast cake, dissolve in one-fourth cup lukewarm water.

Scald the milk, add the boiling water, lard, butter, sugar and salt. When the mixture is lukewarm add the yeast and three cups flour. Beat thoroughly, cover and set in a warm place until light. Add rye meal until the dough is stiff enough to knead. Knead, let rise, knead, shape into loaves let rise again, and bake.

PARKER—HOUSE ROLLS—Two cups scalded milk, three tablespoonfuls butter, two tablespoonfuls sugar, flour, one teaspoonful salt, one yeast cake dissolved in one-half cup lukewarm water.

Add butter, sugar and salt to milk, when lukewarm add dissolved yeast cake and three cups of flour. Beat thoroughly, cover, let rise until light. Cut down and add flour to knead (about two and a half cups), let rise again, toss on floured board, knead, roll to one-half inch thickness, cut with biscuit cutter and shape. Let rise and bake in a hot oven.

GERMAN COFFEE BREAD—One cup scalded milk, one-third cup shortening, one-fourth cup sugar, one teaspoonful salt, flour, one-half yeast cake soaked in one-fourth cup lukewarm milk, one-half cup raisins, one egg well beaten.

To lukewarm milk containing shortening, sugar and salt, add yeast cake, beaten egg and flour to make a stiff batter. Cover and let rise

until double in bulk. Cut down, beat thoroughly, add raisins and spread evenly in buttered pan one-half inch thick. Let rise. Before baking brush over with beaten egg and cover with the following mixture: Three tablespoonfuls melted butter, two tablespoonfuls flour, one-third cup brown sugar, one tablespoonful cinnamon.

WHITE BREAD, USING PART CORN FLOUR—1. Two cups water, three cups white flour, two tablespoonfuls sugar, one cake yeast. 2. Seven cups white flour, one tablespoonful salt, two tablespoonfuls lard (melted), two cups corn flour, two cups skimmed milk (scalded).

Make a sponge of No. 1. When real light add to ingredients in No. 2 Corn flour should be sifted with four cups of the white flour. Let rise until double in bulk. Shape into loaves. Let rise again until double in bulk and bake.

RICE BREAD—1. One and a half cups water, three tablespoonfuls sugar, one cake yeast, two cups white flour. 2. Two cups skimmed milk (scalded) two cups uncooked rice (two teaspoonfuls salt, one cup water), one tablespoonful salt, two tablespoonfuls lard, two cups white flour.

Make sponge of No. 1. Steam rice in a steamer—not a double boiler, using one cup water. Steaming is preferable since rice will be too dry if cooked any other way. Mash rice somewhat. When sponge is light, add to ingredients in No. 2. Milk and rice should be lukewarm when yeast is added. Make a real stiff dough. Allow it to rise until it has doubled its bulk; form into loaves, allow to rise until double in bulk again and bake in moderately hot oven.

ROLLED OATS BREAD—1. One cake yeast, one cup lukewarm water, four cups boiling water, four cups rolled oats, one-third cup brown sugar. 2. Four tablespoonfuls melted lard, eight cups flour, two tablespoonfuls salt.

Pour four cups boiling water over rolled oats, cover and let stand until lukewarm. Dissolve yeast and sugar in one-half cup lukewarm water, add this to rolled oats when lukewarm. Add two cups flour, or enough to make an ordinary sponge. Beat well. Let rise until light. Add rest of ingredients to make a soft dough. Knead well. Let rise until double in bulk, mould into loaves. When double in bulk, bake in moderately hot oven. Oatmeal (steel cut oats) may be substituted for rolled oats.

WHOLE WHEAT BREAD—1. One and one-half cup water, one and one-fourth tablespoonfuls sugar, two cups flour (white), one cake yeast, one cup whole wheat flour. 2. Two cups skimmed milk (scalded), one tablespoonful salt three tablespoonfuls lard, seven cups (more or less) whole wheat flour.

Make sponge of No. 1. When light add to No. 2. Let rise until double in bulk. Mould into pans. When double in bulk bake in a moderately hot oven.

POTATO BREAD—Three pounds boiled and peeled potatoes, nine cups bread flour, one cake yeast, one-half cup water, one tablespoonful salt, three tablespoonful sugar.

Clean and boil three pounds (or about ten to twelve medium potatoes) allowing them to get very soft. Peel and mash the potatoes while hot, leaving no lumps. Take one and a half pounds, or two and a half solidly packed cups of mashed potato while lukewarm and add dissolved yeast and salt; add one cup flour, mix thoroughly. Do not add any more water at this stage unless absolutely necessary. Let this mixture rise until it has become very light. Sponge will be much softer when risen. Now add remainder of ingredients, knead thoroughly until a smooth and elastic dough has been formed. The dough must be very stiff since the potato contains a large amount of water. Let rise until more than double in volume. Shape into loaves, let rise again and bake in moderate oven.

SOUPS

(From Iowa State College, Home Economics Dept.)

Soups Classified as to Food Value

I. Cream Soup: 1. Source of fuel food. 2. Served with a light meal rather than a heavy meal. 3. Give an opportunity to use a great variety of vegetables. 4. Give an opportunity to use fish and oysters. 5. Give an opportunity to increase food value by the addition of egg. 6. Give an opportunity to increase food value by the addition of cereals.

II. Stock Soups: 1. Clear stock soups are used with heavy meal as an appetizer. 2. Stock, with the addition of meat and vegetables, gives added food value.

Classification of Soups

I. Soups with Stock: 1. Standard broth or brown soup stock. 2. Bouillon. 3. Consomme.

II. Soups without Stock: 1. Cream, 2. Puree. 3. Chowder.

[NOTES—I. Standard broth or brown soup stock, made from beef, veal, chicken, mutton or game (two-thirds lean meat and remainder bone and fat) lightly seasoned with vegetables, spices and sweet herbs. II. Bouillon made from lean beef (bone sometimes omitted), delicately seasoned, and usually clear. Exception—Clam Bouillon. III. Consomme made from two or three kinds of meat (beef, veal and fowl being employed), lightly seasoned with vegetables, spices and sweet herbs. Always served clear.]

ITALIAN SOUP—One soup bone (trimmings from meat, ground, may be added or substituted), one carrot, one onion, one turnip, one cup cooked beans, one cup stewed tomatoes (or any other vegetable stock or rice water), one-half cup uncooked macaroni, two quarts water, one teaspoonful salt, one-fourth teaspoonful pepper.

Cut the carrot, onion and turnip into cubes. Cook all vegetables, meat and macaroni in the water for at least one hour. (Do not boil).

[NOTES—Grated cheese may be sprinkled over each portion as

served. This soup is very thick and should form the main dish of the meal. Any vegetable in season may be added or substituted. Rice, barley, bread crumbs or oatmeal may be substituted for macaroni.)

SCOTCH BROTH—Two pounds mutton (neck), one-half cup pearl barley, seven cups water, one-half cup chopped carrot, one-fourth cup chopped turnip, one-fourth cup chopped onion, one tablespoonful fat, one tablespoonful flour, two teaspoonfuls salt, one-fourth teaspoonful pepper, parsley.

Soak barley several hours in cold water. Wipe meat with a clean, wet cloth. Remove fat and skin. Scrape meat from bone and cut in small pieces. Boil bone in two cups water and save water. Simmer meat in water and when near boiling point add barley and vegetables. Simmer until meat and vegetables are tender. Cook fat and flour together and add water in which bones have been cooked. Stir into broth and add seasoning. Serve without straining.

BUTTERMILK SOUP—Three quarts buttermilk, one-half cup rice (or macaroni or oat meal or corn meal), one-half cup raisins, one-fourth cup sugar, salt.

Heat buttermilk, stirring constantly to avoid curdling, until it boils. Add rice and raisins. Boil three-fourths hour. Add sugar and salt.

BAKED BEAN SOUP—One and a half cups baked beans, three cups water, one sliced onion, one stalk celery, one cup strained tomatoes, one tablespoonful fat, two tablespoonfuls flour, one-half tablespoonful catsup, salt, pepper.

Simmer beans, onion, celery in water until soft. Mash, add tomato and catsup, season to taste, add to fat and flour which have been cooked together.

TOMATO SOUP—One cup beef stock, one cup boiling water, one cup strained tomato juice, one teaspoonful finely chopped onion, two tablespoonfuls fat, two tablespoonfuls flour, one-half teaspoonful salt, one-eighth teaspoonful pepper.

Add the tomatoes and onions to the beef stock and cook for five minutes. Melt fat, add dry ingredients, blend and cook thoroughly. Add the tomato mixture. Cook until smooth and glossy. Strain and serve.

YELLIOW SPLIT PEA SOUP—One cup split peas, three quarts cold water, one small onion, two cups hot water or stock; two tablespoonfuls fat, three tablespoonfuls flour, two teaspoonfuls salt, one-eighth teaspoonful pepper.

Soak peas over night in cold water. Drain, add the three-quarts of cold water and the onion. Simmer for at least four hours or until peas are soft. Mash, melt fat, add flour and cook thoroughly. Add stock and seasoning. Cook until thickened. Add peas and heat.

CREAM OF VEGETABLE SOUP (PUREE)—A puree is made by

adding the pulp of cooked vegetables to milk or cream. The milk is thickened (white sauce) with flour or corn starch in order to bind the solid and liquid parts of the soup together.

CREAM OF PEA SOUP—Two cups peas, one teaspoonful sugar, three cups milk, one-fourth teaspoonful mustard, two tablespoonfuls fat, one and a fourth tablespoonfuls flour, one teaspoonful salt, one-half teaspoonful pepper.

Heat the peas, drain and mash. Add seasonings. Melt fat, add flour, blend and cook thoroughly. Add milk gradually. Add the pea mixture. Cook until it thickens.

POTATO SOUP—Two cups mashed potatoes, one quart milk, one tablespoonful chopped onion, two teaspoonfuls fat, two tablespoonfuls flour, one and a half teaspoonfuls salt, one-eighth teaspoonful pepper, few grains cayenne, one teaspoonful chopped parsley may be added.

Cook potatoes in boiling salted water, when soft drain and mash. Melt fat, add dry ingredients and onion, stir until thoroughly blended and cooked. Add milk gradually, add mashed potatoes. Cook until the mixture thickens. Add chopped parsley. (Cold potatoes may be used).

POTATO SOUP WITH CARROTS—Three medium sized potatoes, two medium carrots, two cups water (use vegetable water), two tablespoonfuls fat, four tablespoonfuls flour, two slices onion, one a half cups milk, salt, pepper, sprig of paarsley.

Cook potatoes and carrots until soft. Drain and save the two cups water needed for the soup. Scald milk with chopped onion and parsley. Melt fat, add flour and cook thoroughly. Add liquid, seasoning and cooked vegetables. Heat thoroughly.

OYSTER AND CORN STEW—One-haalf pint oysters, one cup corn, four cups scalded milk, two tablespoonfuls flour, two tablespoonfuls fat, one-half tablespoonful salt, one-eighth teaspoonful pepper.

Clean oysters by placing in a colander and pouring cold water over them. Simmer oysters in one-half cup water until plump. Melt fat, and flour, blend and cook thoroughly. Add hot milk gradually and stir constantly. Add corn and oysters and cook until they are plump and edges begin to curl.

CREAM OF CORN SOUP¼ One cup corn, one cup cold water, one-half small onion, one and a half cups milk, one tablespoonful fat, two taablespoonfuls flour, salt, pepper.

Chop corn and simmer fifteen minutes in water. Heat onion in milk. Melt fat, add flour and cook thoroughly. Add hot milk and cook until thickened. Add corn and seasoning. Heat.

[NOTE—One beaten egg be added just before serving.]

DANDELION SOUP—One cup dandelion pulp, one tablespoonful fat, one tablespoonful flour, one cup milk, one slice onion, one hard cooked egg, salt, pepper.

Heat milk with onion. Melt fat, add flour and cook thoroughly. Add milk and cook until thickened. Add dandelion pulp, chopped egg whites, riced egg yolks and seasonings. Heat.

[NOTE—The pulp of any greens may be used instead of dandelion pulp.]

DUCHESS SOUP—Three and a half cups milk, one-half cup water from vegetables, one-half cup carrot (chopped), two tablespoonfuls onion (chopped), two tablespoonfuls fat, two tablespoonfuls flour, one-half cup grated cheese, two teaspoonfuls salt, one egg yolk, one-eighth teaspoonful pepper.

Cook vegetables in small amount of water and save water. Melt fat, add dry ingredients, blend and cook thoroughly. Add milk, vegetable stock and vegetables and cook until it thickens. Add cheese and stir until melted, pour gradually upon beaten egg yolks, stir constantly and heat. Serve at once.

Soup Serving

CROUTONS—Cut stale bread in one-third inch slices and remove crusts. Spread thinly with butter and cut slices in one-third inch cubes, put in a pan and bake until delicately brown.

NOODLES—One egg, one-half teaspoonful salt, flour.

Beat eggs slightly, add salt and flour enough to make a very stiff dough; knead and roll as thinly as possible. Cover with towel and set aside for twenty-five minutes; roll loosely like a jelly roll, cut into thin slices, and cook in boiling salted water fifteen minutes; drain, and add to soup. Noodles may be served as a vegetable.

MACARONI—Macaroni and spaghetti may be cut into rings after it is cooked and used as a soup garnish.

SALADS

(University of Nebraska, Domestic Science Department).

PINEAPPLE SALAD—Select perfect slices of pineapple. Put cream cheese ball in center. Place strips of pimento around cheese and around edge of pineapple. Put riced cream cheese on top. Serve with mayonnaise on lettuce leaves.

BEET SALAD—One-half cup chopped nuts, one quart chopped cooked beets. Add the following dressing: One cup vinegar, one-third cup sugar one teaspoonful butter, one-fourth teaspoonful pepper, one teaspoonful corn starch, one teaspoonful salt.

Boil all together and cool.

VEGETABLE SALAD—One can peas, one tablespoonful chopped olives, one tablespoonful chopped pickles, one tablespoonful grated cheese, one teaspoonful finely chopped onions.

Serve on lettuce leaves with boiled dressing.

ASPARAGUS SALAD—Arrange cooked asparagus which has been

thoroughly chilled on a bed of crisp lettuce leaves and arrange the following mixture to represent a band across the middle of the bunch: To the white of one hard cooked egg finely chopped add one tablespoonful each of pickle and pimento finely chopped and one-half tablespoonful finely chopped parsley. Serve with French dressing.

CARROT SALAD—Grind raw carrots, add chopped nuts. Serve with boiled dressing on lettuce leaves.

ORANGE AND RAISIN SALAD—Pare oranges and remove pulp from each section. Cook raisins in boiling water until plump and tender, drain, remove seeds and chill; marinate in dressing. Then add prepared orange and arrange on lettuce leaves. Serve with boiled dressing or mayonnaise.

APPLE AND CELERY SALAD—Cut firm, tart apples into strips one and a half inches long and about one-eighth of an inch wide. Cut celery into pieces of same size. Mix equal portions of celery and apples with cream dressing or mayonnaise. Serve on crisp lettuce leaves and garnish with strips of pimento. Green peppers which have had seeds removed and then scalded may be cut in thin strips and used instead of pimentos.

EASTER APPLES—Four hard cooked eggs. Remove shells at once and while hot press into apple shapes. Color with Burnett vegetable coloring (red) to represent snow apples. Arrange on lettuce and serve with salad dressing to which has been added chopped olives or pickles. Put cloves in stem end and a stam in other end.

STUFFED PIMENTO SALAD—Select two perfect pimentos. Remove seeds and let drain. Take two small cream cheeses, mash and mix thoroughly through them chopped English walnuts or pecans. Salt to taste. Press this mixture into peppers, taking pains to fill all crevices full. Place on ice until well chilled and firm. Then cut in one-fourth inch slices, using sharp knife. Place on lettuce leaves and serve with mayonnaise. Slices of fresh cucumbers may be served with cheese or green peppers may be substituted for pimentos.

FRENCH DRESSING—One-half teaspoonful salt, one-fourth teaspoonful pepper, two-thirds teaspoonful sugar, two tablespoonful vinegar, four tablespoonfuls olive oil.

Mix ingredients and stir until well blended. Lemon juice may be added or a few drops of onion juice.

CHIFFONADE DRESSING—One-half cup olive oil, three tablespoonfuls vinegar, one teaspoonful chopped onion, one teaspoonful salt, one-fourth teaspoonful paprika, one teaspoonful green pepper (chopped), one teaspoonful red pepper (chopped), one-half teaspoonful tanagor vinegar, one hard cooked egg, one-eighth teaspoonful black pepper.

Chop all ingredients. Mix thoroughly. Suitable for any green vegetable.

GERMAN DRESSING—One cup cream (whipped) one teaspoonful vinegar, one-fourth teaspoonful salt, cayenne.

Add horseradish or cucumbers if desired.

MAYONNAISE DRESSING—One teaspoonful mustard, one teaspoonful salt, one teaspoonful powdered sugar, a few grains cayenne, yolks of two eggs, two tablespoonfuls lemon juice, two tablespoonfuls vinegar, one and a half cups olive oil or Wesson's oil.

Mix dry ingredients, add egg yolks; when well mixed add one-half teaspoonful vinegor. Add oil gradually.. at first drop by drop and stir constantly. As mixture thickens, thin with vinegar or lemon juice alternately unoil all is used, stirring or beating constantly. If oil is added too rapidly dressing will curdle. A smooth consistency moy be restored by taking another egg yolk and adding the curdle mixture to it vedy slowly. The process will be more rapid if utensils and matediols are kept cold. Keeu the dressing in a cold place until ready to serve the salad. A half cup of heavy cream beaten until thick may be folded in before serving and more seasoning added. Neved mix mayonnoise dressing with the meat, fish, fruit or vegetables until ready to serve, and then only part of it, and ploce the remainder on the top.

BOILED DRESSING—One cup milk, one-half cup vinegar, one teaspoonful mustard, two teaspoonfuls salt, three tablespoonfuls sugar, two tablespoonfuls butter, two tablespoonfuls flour, yolks of four eggs.

Mix dry ingredients, add eggs, then milk. Add vinegar slowly, beating vigorously. Allow to come to a boil, just before removing from fire, add butter.

CABBAGE JELLY SALAD—Two tablespoonfuls gelatine, one-half cup water, one and a half cups boiling water, three cups shredded cabbage, two peppers, one teaspoonful salt, one-half cup sugar, one-fourth cup lemon juice, one-half cup vinegar.

Soften gelatine in cold water. Add boiling water, salt, sugar, lemon juice and vinegar. Add cabbage and pepper (chopped fine). Mix thoroughly, chill and serve with mayonnaise.

MOULDED SALMON SALAD—One can salmon, one-half teaspoon-salt, one and one-half tablespoons sugar, one-half tablespoon flour, one teaspoon mustard, few grains cayenne, yolks of two eggs, one and one-half tablespoons melted butter, three-fourths cup milk, one-fourth cup vinegar, three-fourths tablespoon gelatine, two tablespoons cold water.

Remove salmon from can, rinse thoroughly with hot water and separate in flakes. Mix dry ingredients, add egg yolks, butter, milk and vinegar. Cook over boiling water, stirring constantly until mixture thickens. Add gelatine soaked in cold water. Strain and add to salmon. Mould, chill, serve with cucumber sauce.

Cucumber Sauce: Mix one cup stiff salad dressing and one cup

finely chopped sweet cucumber pickles. If desired, one cup whipped cream may be folded in just before serving.

CABBAGE ROSE SALAD—Commence at the center of the cabbage head, roll the leaves back half way, forming loose petals. Next take a sharp knife and remove the center. Around the outside of cabbage fasten four lettuce leaves with wooden toothpicks, and fill in the cavity in the cabbage with potato salad. Garnish the top of the potato salad with the grated yolks of hard boiled eggs.

POTATO SALAD—Two cups diced boiled potatoes, one-half cup finely cut celery, one apple (diced), one hard boiled egg (diced), two small pickles (diced), salad dressing.

Mix together, moisten with salad dre-ssing and add salt to taste.

CHERRY SALAD—Remove the stones from large canned white cherries, and fill the cavaties with hazelnuts. Arrange on lettuce leaf, moisten with salad dressing, and garnish with candied cherries.

OYSTER SALAD—One can cove oysters, one and one-half cups chopped celery, one cup cracker crumbs, one teaspoon celery seed, salad dressng.

Mix together, moisten with salad dressing and salt to taste. Garnish with sliced pickles.

MEATS AND MEAT SUBSTITUTES.

(From University of Nebraska, Home Economics Department).

Meats.

SHOULDER STEAK (SWISS)—Pound shoulder steak with flour, sear well; simmer until half done, take meat out of kettle, put in layer of vegetables, then meat, then vegetables. Cook until tender. Sprinkle with salt and pepper. Carrots, turnips and potatoes cut in cubes, peas, little onions may be used.

STUFFED SKIRT OR FLANK STEAK—One skirt or flank steak, two cups soft bread crumbs, one tablespoonful chopped parsely, two tablespoonfuls beef drippings, two teaspoonfuls sweet marjoram, one teaspoonful salt, four dashes of pepper.

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Mix the bread crumbs, parsley and seasoning. Melt the beef drippings, add the seasoned bread crumbs to it, fried in bacon fat until well browned. Spread over the steak. Roll tightly and tie with twine. Sear in suet or other fat. Place the steak on the rack in a roasting pan and put bits of fat over the top. Add one-half cup of hot water, cover and bake in a quick oven for three-fourths of an hour. Serve with brown sauce.

ROLLED BEEF STEAK—One pound round steak, one-eighth teaspoonful ground cloves, one-half teaspoonful salt, one cup soft bread crumbs, one small onion (chopped). Hot water or milk, salt, pepper, flour and fat.

Cut round steak of one-half inch thickness, or any less expensive cut of beef, into three pieces three by four inches. Make a stuffing of the crumbs, chopped onions, cloves, salt, pepper with enough hot water or milk to moisten. Fry in bacon fat until brown. Spread the stuffing over the pieces of steak, roll up each piece and tie it with a piece of string or skewer it with toothpicks. Dredge generously with flour and add salt and pepper. Brown in bacon fat, cover with boiling water and simmer for one and a half hours or until tender. Remove the strings or toothpicks and serve the meat with the sauce in which it was cooked.

CASSEROLE ROAST—Two or three pounds rump or round of beef, one slice of salt pork, a few peppercorns, one-fourth each of a carrot, a turnip, an onion and a head of celery, cut into small pieces.

Fry out the pork. Brown the meat on both sides in the fat. Put in a casserole with the vegetables around it, add two cups of water or stock. Cover and cook in a hot oven three hours, basting occaasionally. A sauce or gravy can be made with water, flour and some of the juice left in the casserole.

SYRIAN STEW—Two cups raw mutton cut into cubes, two tablespoonfuls fat, two tablespoonfuls flour, two cups string beans, two onions, two cups tomatoes, salt, water.

Dredge the meat with the flour and brown it in the fat. Put all the ingredients in a stewpan, scraping from the frying pan all the flour and fat, and add enough water to barely cover. Cook slowly until the meat is tender.

STUFFED HEART WITH VEGETABLES—Clean and wash heart, stuff skewer into shape, season with salt and pepper, dredge with flour and saute in pork fat, adding to fat one stalk celery and one tablespoonful chopped onion, two sprigs parsley, four slices carrot cut in pieces, half the quantity of turnip, a bit of bay leaf, two cloves, and one-fourth teaspoonful peppercorns. Turn heart occasionally until well browned, then add one and a half cups brown stock, cover and cook slowly one and a half hours. Serve with cooked carrots and turnips cut in strips and fancy shapes.

Meat Substitutes.

PEANUT LOAF—One cup chopped peanuts, one cup boiled rice, one tablespoonful butterine, one tablespoonful flour, one-half cup milk seasoning.

Place rice and peanuts in layers and make a white sauce out of the milk, flour and butterine; pour over the rice and peanuts and bake in a moderate oven for about fifteen minutes.

PEANUT SOUP—One cup finely ground peanuts, two cups water, two cups milk (skimmed), cayenne, two tablespoonfuls butter or fat, two tablespoonfuls flour, on teaspoonful salt.

Cook peanuts and water together thirty minutes. Rub through

a puree strainer, combine as for soup. One-third cup of whipped cream may be added. Serve hot.

BAKED MACARONI WITH PEANUT BUTTER—One cup macaroni, two cups milk, three and a half tablespoonfuls peanut butter, one teaspoonful salt, three-fourths cup buttered bread crumbs.

Prepare and cook macaroni in boiling watr twenty minutes. Put in a buttered baking dish. Heat milk in double boiler and add gradually to peanut butter. Add salt. Pour over macaroni, cover and bake in a slow oven forty minutes. Remove cover, sprinkle with crumbs and bake until crumbs are brown.

SPAGHETTI AND BROAD BEAN MOLD—Six ounces spaghetti one and a half cups water, one-half teaspoonful salt, one pound broad beans (weighed after shelling), three-fourths pint white sauce (one-half milk and one-half stock) one-half teaspoonful chopped parsley, pepper and salt.

Cook the spaghetti in the water, coiling it under the boiling water. Skin and cook the beans in salted water. Strain and mix half of them with six tablespoonfuls of the sauce and the parsley. Butter a mould and put in a layer of spaghetti, then a layer of beans, repeat until the mould is full, leaving spaghetti on top. Cover with buttered paper and steam for forty minutes. Add one-half cup of bean water to the rest of the beans; season with cayenne and boil up. Turn out the mold onto a hot platter, pour a part of the sauce around the mould and serve rest in a gravy bowl. Serve at once.

PEA ROAST—Three-fourths cup bread crumbs, one-half cup canned pea pulps, one tablespoonful sugar, one-fourth cup butter, one egg, one-half tablespoonful English walnut meats chopped fine ,one-eighth teaspoonful pepper, three-fourths cup milk.

Drain canned peas, rinse thoroughly, cover with cold water and bring to boiling point and let simmer three minutes. Drain and force through a puree strainer. Mix fine, add dry bread crumbs, pea pulps, sugar, nut meat, egg slightly beaten, seasoning and milkfl Turn into a small bread pan lined with paraffin paper and allow to stand fifteen minutes. Cover and bake in a slow oven forty minutes. Remove to hot serving dish and garnish with carrot timbales.

NUT CROQUETTES—One cup stale white bread crumbs, two-thirds cup milk, yolks of two eggs (beaten) or one whole egg, three-fourths cup peanuts, salt and pepper.

Soak the bread crumbs in the milk, mix with the nuts, season and add the beaten egg yolks. Shape, crumb, egg and crumb. Fry In deep fat.

MACARONI, VIRGINIA STYLE—One and a half cups macaroni, two tablespoonfuls butter, one-half cup grated cheese, one and a fourth cups white sauce, three tablespoonfuls dried bread crucbs, one-half cup chopped cooked ham or bacon.

Break macaroni into one-inch pieces and cook in boiling salted water for twenty minutes or until soft. Drain in a colander and pour over one quart cold water. Put half in a buttered baking-dish, dot over with one-fourth the butter and sprinkle with one-half the cheese. Repeat, pour over the white sauce, cover with dried bread crumbs mixed with remaining butter and bake in a hot oven until the crumbs are brown.

SWEET POTATO LOAF—Six medium-sized sweet potatoes, two eggs beaten slightly, three tablespoonfulls melted butter, one tablespoonful sugar, pinch of nutmeg, salt and pepper to taste, one cup English walnuts.

Boil the potatoes until soft. Mash, add the butter, nutmeg, salt and pepper. Then stir in the eggs and nuts. Form into a loaf and bake in a buttered baking-dish for about thirty minutes.

SPAGHETTI WITH VEGETABLE DRESSING—Four slices bacon, one slice onion, one-half can tomatoes, hot boiled spagetti, one-half teaspoonful salt, one-eighth teaspoonful pepper, dash of nutmeg.

Cut the bacon into small pieces and try out. Add the remaining ingredients except spaghetti. Bring gradually to the boiling point and let simmer for fifty minutes. Pour over the cooked spaghetti and let stand for ten minutes. Serve very hot.

To cook spaghetti, take one-fourth pound spaghetti and dip the ends in boiling salted water. As it softens, it will bend easily. When it may be coiled under boiling water, cook for twenty minutes or until soft. Drain in a colander. Pour over one quart cold water. Arrange on hot platter.

ENGLISH MONKEY—Three-fourths cup cheese (grated), three-fourths cup stale bread crumbs, three-fourths cup milk, cayenne, one egg (slightly beaten), one tablespoonful butter, one-half teaspoonful salt.

Heat the milk, add the crumbs and the butter. When the crumbs are well softened, add the cheese. Stir until the cheese is melted. Add the seasoning and egg. Pour over crisp crackers.

RISOTTO—Boil rice until tender, drain and steam it dry. Mix lightly with grated cheese. Turn into a hot dish and pour over the following sauce:

Sauce for Risotto.—Three teaspoonfuls butter, one cup tomatoes, one small onion (finely chopped), one tablespoonful beef extract, salt and cayenne pepper.

Cook the onion in butter until well browned. Then add tomato and simmer for five minutes.

CREAMED OYSTERS—Wash oysters, parboil, drain and strain the liquor through a cheesecloth. Melt three tablespoonfuls butter and add three tablespoonfuls flour. Add one cup oyster liquor and cook until smooth. Add one-half cup heavy cream. Salt and pepper

to taste and add one-fourth teaspoonful paprika. Add the oysters and when heated add slightly beaten yolks of two eggs diluted with a little cream. Serve at once.

PEAS WITH BACON—Cut two slices of bacon into small pieces and try out. Drain canned peas, add them to the bacon and shake over the fire until thoroughly heated and well mixed. Season with salt and pepper, if necessary.

MACKEREL—Wash the fish free from salt in cold water. Soak in fresh water from five to ten hours. Place in a pan of cold water, bring to the simmering point and cook for fifteen minutes. Drain carefully, season with butter, and serve hot, or serve with egg sauce.

EGG SAUCE—Add three hard-cooked eggs cut into slices to white sauce.

CODFISH BALLS—One cup salt codfish, two and a half cups potatoes (diced), one egg well beaten, one-half tablespoonful butter, pepper. Wash the fish and pare the potatoes. Cook the fish and potatoes in boiling water until the potatoes are soft. Drain, mash the potatoes, mince the fish very fine and add it to the potatoes. Add the seasonings and egg. Drop bp spoonfuls into hot fat or form into small balls. Drain on brown paper. Reheat the fat after each frying. Garnish with bacon.

VEGETABLES.

(Iowa State College, Extension Department).

SCALLOPED TOMATOES—One-quart can tomatoes, one and a half cups bread crumbs, three tablespoonfuls butter, one teaspoonful salt one-fourth teaspoonful pepper.

Drain and reserve liquid from one can of tomatoes. Cover the bottom of a buttered baking-dish with a layer of solid tomatoes. Melt butter in sauce pan and stir bread crumbs in all a once. Sprinkle tomatoes with salt and pepper and add a layer of buttered bread crumbs. Add another layer of tomatoes and so on until all the tomatoes are used. Pour over the tomato liquid and cover with bread crumbs. Bake in a hot oven twenty minutes.

[NOTE—One-half cup chopped nuts may be added to make this a meat substitute.

BOSTON BAKED BEANS

One quart beans, one small onion, one-fourth pound salt pork, two tablespoons molasses, one tablespoon salt, one-half tablespoon mustard, one cup hot water.

Wash and soak beans in cold water over night. In the morning, drain, cover with fresh water, cook slowly (below the boiling point) until skins burst easily. Drain and throw the bean water out of doors, not in sink. Place onion in bottom of earthenware bean pot. Scald and scrape the salt pork and score the rind. Mix the molasses, salt, mustard and hot water together. Place beans in bean pot and bury

pork in beans, leaving rind exposed. Add molasses and hot water mixture. Cover bean pot and bake in a slow oven six or eight hours. Add water from time to time when necessary. Bake uncovered the last hour to permit the pork and beans to brown.

STEWED TOMATOES

One teaspoon salt, two tablespoons sugar, one-eighth teaspoon pepper, one can tomatoes, two tablespoons flour, two tablespoons butter.

Add the salt, sugar and pepper to the tomatoes. Melt butter in a sauce pan, add to the flour and blend. Add tomato mixture and cook thoroughly.

SCALLOPED MACARONI AND TOMATOES

One cup macaroni, one and one-half cups tomato sauce, one-fourth cup grated cheese, one cup buttered crumbs.

Break macaroni into one-half inch pieces and cook in boiling salted water until tender. Drain and cover with tomato sauce. Add cheese. Cover with crumbs and bake until brown in hot oven.

FRIED MUSH

If mush is to be used for frying, rinse mould with cold water and fill with mush. Let stand until cold and firm, slice, and cook each slice in melted fat in a hot frying pan.

HOMINY (COARSE)

Pick over, wash thoroughly and soak in cold water, enough to cover. Stir into boiling salted water, having twice as much water as hominy and cook for ten minutes, then cook for several hours (until soft) in a steamer.

POLENTA

One cup cornmeal, three cups water, one cup tomatoes, two tablespoons bacon fat, three tablespoons chopped onion, one teaspoon salt, one-eighth teaspoon pepper, one-fourth cup grated cheese.

Cook the cornmeal in boiling water for two and one-half hours. Cook the tomatoes, bacon fat and onion, salt and pepper together for one hour. Place a layer of cornmeal mush in baking dish. Cover with tomato mixture; add another layer of cornmeal mush and tomato mixture. Sprinkle grated cheese on top and bake until cheese is melted.

VEGETABLES

(Uni. of Nebr. Extension Service.)

STUFFED POTATOES WITH CHEESE

Bake medium sized potatoes in a hot oven until tender when pierced with a fork. Remove from the oven. With a knife cut off a slice from the long side of the potato, remove the center, being careful not to destroy the shell. Mash this pulp and mix as mashed potatoes, using butter, milk and seasonings. Add to this finely grated cheese, refill the potato shell, and brown in a quick oven.

FRENCH FRIED POTATOES

Wash and pare small potatoes, cut into strips one-third inch square and soak one hour in cold water. Take from the water, dry between towels, and fry in deep fat. Drain on brown paper and sprinkle with salt. Care must be taken that the fat is not too hot, as the potatoes must be cooked as well as browned.

PEAS AND CARROTS

Scrape or pare two carrots, then cut lengthwise into quarters and the quarters into strips one and one-fourth inches long and one-fourth inch wide and thick. Simmer until tender in a very small amount of water. When cooked, the water should be nearly evaporated.

Drain canned peas, rinse in cold water, and add one-half cup boiling water. Boil five minutes, drain, and add carrots. Season with one teaspoon salt, one teaspoon sugar, one-fourth teaspoon white pepper, and three tablespoons butter. Shake over the fire to mix the ingredients. Serve at once.

LIMA BEANS WITH TOMATO SAUCE

Soak one cup lima beans in water over night. In the morning add more water, bring to a boil, and then let simmer slowly until tender. It usually takes about two hours. Salt toward the end of the cooking. Drain and serve with tomato sauce.

TOMATO SAUCE

Two tablespoons butter, two tablespoons flour, two teaspoons sugar, one cup strained tomato, salt, pepper.

Melt the butter and add the flour and seasonings. Add the strained tomato, let boil three minutes, stirring all the time. If a more highly seasoned sauce is desired, brown a slice of onion and one slice of carrot in the butter, add the flour and seasonings, the unstrained tomato, one bay leaf and two cloves. Cook ten minutes. Strain.

ESCALLOPED CABBAGE

Take off outside leaves, cut into sections, remove core, wash in two waters and drain. Have large kettle two-thirds full of violently boiling water (one and one-fourth teaspoons soda and one tablespoon salt to two quarts water). Place the leaves in water one at a time and do not let the water stop boiling. Boil uncovered twenty-five minutes (usually less), or until tender. Drain, put into a buttered baking dish, add white sauce. Cover with buttered bread crumbs and brown in oven.

White Sauce: Four tablespoons butter, four tablespoons flour, one teaspoon salt, two cups milk. Melt butter, add flour, mix thoroughly. Cool. Add milk, heat to boiling, and cook until thick.

STUFFED ONIONS

Peel the onions. Scoop out from tops a portion of the center, parboil them for fifteen minutes, and turn upside down to drain. Fill

them with a stuffing and sprinkle buttered crumbs on top; place in a pan containing an inch of water, cover, let cook in an oven one hour, or until tender, but not so long as to lose their shape. Take off the cover for the last five minutes. Serve with tomato sauce.

STUFFING FOR ONIONS

Two cups stale bread crumbs, one cup minced veal, chicken, ham or beef, three tablespoons melted butter, the inside of a pepper chopped finely, one teaspoon salt, two slices of onion chopped finely.

Brown the pepper and onions in butter, add the bread crumbs, then the meat. Moisten with stock or water if desired. This amount will be enough for six onions.

CHINESE METHOD OF COOKING RICE

Wash thoroughly rice grains in strainer under running water, rubbing rice with fingers until the water that runs off is clear. Have ready a large kettle of rapidly boiling water (one tablespoon salt to two quarts water). Throw into water a few grains of rice at a time so as not to check the boiling of the water. Boil from twenty to forty-five minutes (depending on the age of rice) or until soft, which may be determined by testing the kernels between the fingers. Drain the rice in a strainer, place a towel over it, and set on the back part of the stove or in the oven to dry.

RISOTTO

Boil rice until tender, drain, steam it dry. Mix lightly with grated cheese. Turn into a hot serving dish and pour over the following sauce:

Sauce for Risotto: Three tablespoons butter, three tablespoons water, one-half teaspoon cornstarch, one small onion (finely chopped), three teaspoons beef extract, three to four mushrooms, salt and cayenne pepper. Cook onion in butter until well browned, add water and other ingredients, and simmer five minutes. One cup of tomatoes may be used in place of water.

POTATO SOUFFLE

To two cups plain mashed potatoes add the whites of two eggs beaten stiff, put mixture lightly into a well greased baking dish, and bake in a quick oven until puffed and brown.

DESSERTS

(Uni. of Nebr. Home Economics, Extension Service.)

DUTCH APPLE CAKE

Two cups flour, six teaspoons baking powder, three teaspoons lard, five tablespoons butter, two tablespoons sugar, one egg, one cup milk, apples.

Mix dry ingredients and cut in shortening. Mix egg and milk and combine the two mixtures. Place in buttered pan, and stand small slices of apple half way into the batter. Sprinkle liberally with cinnamon and sugar and bake slowly. Serve with lemon sauce.

Lemon Sauce: One-third cup butter, one cup sugar, three egg yolks (or one egg), one lemon (juice and one-half of rind), one-third cup boiling water. Cream sugar and butter, add egg, water and lemon. Cook until the mixture thickens.

SHORTCAKE

Two cups flour, four teaspoons baking powder, one-half teaspoon salt, four tablespoons butter, three-fourths cup milk.

Mix dry ingredients, work in shortening with finger tips, add milk, shape into round, and bake in buttered tin. When baked, split in two, and fill in the center with crushed fruit. Serve with cream.

APPLE SAUCE CAKE

One cup sugar, one-half cup butter, two cups flour, one egg, one cup apple sauce (unsweetened), one teaspoon cinnamon, one-half teaspoon cloves, one-fourth teaspoon salt, one teaspoon soda, one cup seeded raisins.

Cream sugar and butter, add spices. Dissolve soda in warm water and stir into apple sauce. Add this last to first and then flour, egg, etc. Bake in loaf slowly about forty-five minutes.

KRUMMEL TORTA

Two eggs, one cup sugar, one-half cup bread crumbs, one cup chopped dates, one cup chopped nuts, one tablespoon baking powder.

Beat the eggs light, add the sugar, bread crumbs, chopped dates, chopped nuts, and baking powder. Mix well together, put into a shallow pan and bake three-fourths hour in a slow oven. When cold, break into pieces and fold into whipped cream.

APRICOT SPONGE

Two cups milk, three eggs, two tablespoons gelatin, one-half cup cold water, one-half cup sugar, one-fourth teaspoon salt, one cup apricot pulp.

Make a custard of egg yolks and milk. Add the soaked gelatin, sugar and salt. Let cool. When the mixture begins to thicken, beat thoroughly, add the fruit pulp and stiffly beaten egg whites. Chill and serve with cream.

APPLE SNOW

Whites of three eggs, powdered sugar, one and one-half cups apple pulp.

Pare, quarter and core sour apples. Cook until soft and rub through a sieve. There should be one and one-half cups. Beat on a platter the whites of the eggs until stiff. Add the apple, gradually sweetened to taste, and continue beating. Chill and serve with cream or custard sauce. Raspberries, strawberries or peaches may be used instead of apples.

WINTER SHORTCAKE

Two cups flour, four teaspoons baking powder, one-half teaspoon salt, one-third cup butter, three-fourths cup milk.

Mix the dry ingredients, work in the shortening with the finger tips, add the milk, shape round and bake in a buttered tin. When baked, split in two, and fill in the center with crushed fruit. Serve with cream.

One cup stewed prunes, one-half cup apricots, one-half cup chopped nuts, sugar. Mix together, sweeten to taste, and serve in shortcake.

PRUNE SOUFFLE

Three tablespoons butter, one-fourth cup flour, one-fourth cup sugar, one cup milk, four eggs, two cups stewed prunes.

Melt butter, add flour and gradually add milk. Cook until thickened; cool slightly. Pour upon egg yolks well beaten and mixed with sugar; cut and fold in whites of eggs beaten stiff and dry. Drain prunes, stone, pack closely in bottom of buttered baking dish. Pour over this the custard mixture. Bake from thirty-five to forty minutes in slow oven. Serve with cream.

FOOD FOR THE GODS

One cup English walnuts, one cup dates (chopped), one cup cracker crumbs, two teaspoons baking powder, one and three-fourths cups sugar, whites of seven eggs.

Mix baking powder and crackers, add nuts, dates, and fold in stiffly beaten egg whites. Bake in slow oven for about forty minutes.

RAISIN PUFFS

Two eggs, one-half cup butter, four teaspoons baking powder, one-half teaspoon cinnamon, two cups flour, two tablespoons sugar, one cup milk, one cup chopped raisins.

Cream sugar and butter, add spices. Then mix dry ingredients and add milk and flour alternately to the butter and sugar. Beat vigorously. Add egg yolks and raisins which have been dredged in flour. Add stiffly beaten egg whites last. Steam forty-five minutes. Serve with the following sauce:

Sauce: One-half cup sugar, one tablespoon butter, one-half teaspoon nutmeg, one tablespoon flour, one cup hot water. Mix sugar and flour, add hot water, butter and flavoring, and let come to a boil.

CHERRY TAPIOCA

One cup tapioca, one cup sugar, one teaspoon vanilla, two cups canned cherries.

Soak the tapioca over night. In the morning add more water, boil five minutes and then cook in double boiler until clear. Add sugar, and when cool add cherries and vanilla. Serve cold with whipped cream.

CHOCOLATE CAKE

Two squares chocolate dissolved in five tablespoons boiling water, one-half cup butter, one and one-half cups sugar, four egg yolks, four egg whites, one-half cup milk, one and three-fourths cups flour, three teaspoons baking powder, one teaspoon vanilla.

Cream sugar and butter, add egg yolks, then melted chocolate, beating vigorously. Mix flour and baking powder and add to the above alternately with the milk; next add vanilla, and lastly fold in the stiffly beaten egg whites. Bake in two layers.

Chocolate Frosting: Two cups sugar, two squares Baker's chocolate, two tablespoons butter, one cup milk, one teaspoon vanilla, one teaspoon gelatine. Mix sugar, chocolate, milk and butter together and cook until it reaches a very soft ball stage. Remove from fire, add vanilla and the gelatine, which has been dissolved in two tablespoons water. Beat until creamy and spread over the cake smoothly.

GRAPE-NUT PUDDING

One-half cup Grape-nuts, two eggs, one-fourth cup sugar, two cups cold milk, one-half teaspoon salt, one-fourth teaspoon nutmeg.

Soak Grape-nuts one-half hour or longer in hot water to cover. Beat the eggs and sugar until light, then add cold milk. Add the softened Grape-nuts, salt and nutmeg. Pour into a baking dish and bake in a slow oven until firm. Serve cold with or without cream.

RICE BAVARIAN CREAM

Three cups milk, one-half cup rice, one-half teaspoon salt, nutmeg, one-half cup sugar, one tablespoon or one-half box gelatin, one-half cup cold water, whites two eggs or one cup cream.

Wash the rice, simmer it with the sugar and the salt in the milk until thick and soft. Stir frequently to break up the kernels. Soak the gelatin in cold water and then dissolve it in the hot rice mixture. Season to taste with nutmeg or fold in preserves, orange or pineapple marmalade, and a little lemon juice. Cool until nearly set. Beat well with a Dover egg beater and fold in stiffly beaten whites of egg or one cup thick whipped cream. Turn into molds. Serve cold with plain or whipped cream.

FROZEN DESSERTS

(Perdue Uni. Agric. Extension.)

GRAPE JUICE ICE CREAM

One and one-half cups thin cream, three-fourths cup grape juice, three-fourths cup sugar, juice of one lemon.

Scald cream, add sugar. Cool. Add grape and lemon juice. Freeze according to directions. This makes one quart when frozen.

MILK SHERBET

Two cups milk, six tablespoons lemon juice, three-fourths cup sugar.

Mix juice and sugar, add milk (curdling does not affect either the taste or texture of the mixture, as the curds entirely disappear upon freezing). Freeze. This makes about one quart when frozen.

CHERRY SHERBET

One and one-half cups cherry juice, two cups water, one egg white, juice of one lemon, one and one-half cups sugar.

Make syrup of water and sugar and boil for ten minutes. Add to fruit juice. Partially freeze. Add the well beaten egg white and continue freezing till hard. This makes about three pints when frozen.

MAPLE MOUSSE

One pint double cream, one tablespoon granulated gelatin, one cup maple syrup.

Soak gelatin in cold water and dissolve in hot syrup. Allow to begin to thicken and fold in beaten cream. Mould, pack in salt and ice and let stand three hours.

COFFEE PARFAIT

Four eggs, one cup coffee, one cup sugar, one pint double cream.

Boil sugar and coffee. Pour over beaten eggs. Return to boiler and cook till mixture coats the spoon. Beat till cold, add beaten cream. Pack in ice and salt for four hours.

PASTRY

(U. of N. Economics Dept.)

PLAIN PASTRY

One cup flour, one-fourth cup fat, one-fourth teaspoon salt, water (ice cold).

Sift flour and salt. Cut and rub in shortening and add water gradually until soft enough to mold. Sprinkle molding board with flour and roll out pastry from center. Handling and turning over makes pie dough tough.

RICHER PASTRY

One cup flour, one-third cup shortening, one-half teaspoon baking powder, one-fourth cup thick cream, one-fourth teaspoon salt.

Sift flour, baking powder and salt. Cut and rub in the shortening. Then add thick cream until dough is soft enough to mold; some ice cold water may be needed. Then follow directions for plain pastry.

FLAKE PASTRY

Use same proportions as for plain pastry. Roll out, then spread with three tablespoons butter. Fold edges over and roll again. Put on ice for two to three hours. Then follow general directions for making pie.

Pastry Variations

CHEESE STRAWS

Roll flaky pastry until rather thin. Sprinkle one-half the dough with cheese, salt and paprika. Moisten edges with water and fold over. Roll until thin, using flour if necessary to keep from sticking, and repeat. Cut with sharp knife in long strips. Bake in quick oven.

CINNAMON CHIPS

Roll pastry rather thin. Sprinkle with sugar and cinnamon mixed together. Cut in squares. Serve with apple sauce.

TARTS

Roll pastry thin. Cut in squares and place one tablespoon of marmalade or jelly in center. Moisten edges with water. Bring four corners together in the center. Prick with fork. Other shapes can be easily made.

BUTTERSCOTCH PIE

One cup medium brown sugar, one-half cup sweet milk, one tablespoon butter, three tablespoons flour, yolks of two eggs, pinch salt.

Mix sugar and flour and pinch salt. Add milk and butter and cook until thickened. Beat egg yolks until thick and creamy. Add to custard and cook one minute. Put in baked pie crust and cover with meringue. Brown slightly. This makes a thin layer of filling; if a thicker layer is desired, double the recipe.

Meringue: One egg white, one tablespoon sugar. Use the standard egg beater. Beat until stiff and dry. Add sugar. Continue beating. Use lemon juice for flavoring. Bake five minutes in oven just hot enough to turn points, then turn off oven and let stand forty minutes to one hour.

CAKES

(Uni. of Nebr. Home Economics Extension Service.)

General Proportions for Cake

No. of Cake Formula.	Flour.	Sugar.	Fat.	Eggs.	Liquid.	Baking Powdre.	Salt.
I.	3	1½-2c.	¼ c.	1	1-½ c.	5-6t.	½ t.
II.	3	1-1½ c.	½ c.	2-3	1c.	5-4t.	1/3t.
III.	3	1-1½ c.	¾ c.	3-4	¾ c.	4-3t.	¼ t.
IV.	3	1-1½ c.	1c.	5-6	½ c.	3-2t.	1/5t.

General Directions for Cake Making

I. Get all materials and supplies ready before beginning to mix the cake.

II. Sift flour, baking powder and salt and spices together.

III. Cream butter and sugar.

IV. Add egg yolks, slightly beaten.

V. Then alternate, adding moisture and flour mixtures; beat thoroughly.

VI. Fold in stiffly beaten egg whites.

VII. Baking: Never fill cake pan more than two-thirds full, and the dough should be pushed away from the center. A medium hot oven at first usually gives the best results. Loaf cake takes about forty minutes. Layer cake, twenty-five minutes. A cake is thoroughly baked when no dough clings to the tootpick when it is placed in the cake, or when the cake draws away from the sides of the pan. If no impression is left on the cake when it is touched with the finger it is thoroughly baked.

Variations—For Recipe No. II

Cocoanut Cake: Add one cup cocoanut, use one-third cup butter, one teaspoon lemon, one-half teaspoon vanilla.

Nut Cake: Add one cup chopped nuts, use one-third cup butter, one-half teaspoon lemon and one-half teaspoon vanilla.

Spice Cake: Three to six teaspoons mixed spices, sifted with flour.

Fruit Cake: One to one and one-half cups fruit—raisins and citron.

Chocolate Cake: Three squares chocolate. melted, and added to butter and sugar, one-third cup butter.

SNOW WHITE CAKE

One-half cup butter, one and one-half cups sugar, one cup warm water, four teaspoons baking powder, whites of five eggs; one-half teaspoon vanilla, one-half teaspoon lemon, two and one-half cups flour.

Beat butter to cream, add gradually the sugar, sift baking powder with flour, add half the warm water, then half the flour to the sugar mixture, beat two minutes, add the remaining water and flour and beat five minutes. Fold in well beaten whites of eggs. Bake in oblong pan or layers in moderate oven three-fourths of an hour. When cool, cover with marshmallow icing, garnish with candied cherries.

SUNSHINE CAKE

Whites of eleven eggs, yolks of four eggs, one cup flour, one teaspoon cream of tartar, one-eighth teaspoon salt, one-half teaspoon vanilla extract, one-half teaspoon lemon, one and one-third cups sugar.

Beat whites of eggs, adding salt, until light and foamy, add cream of tartar. Beat until very stiff and glossy. Add yolks of eggs which have been beaten until thick and lemon colored, with one-third cup sugar. Carefully fold in sugar (one cup), which has been sifted three times. Then flour, sifted five times. Flavor. Bake forty minutes in a moderate oven.

WHITE GINGER CAKE

One cup butter, two cups sugar, four cups flour, one teaspoon lemon extract, one cup sour milk, one teaspoon soda, two eggs, one-half teaspoon nutmeg, one-half teaspoon cinnamon, one teaspoon ginger.

Cream butter, add sugar, then add flour. Mix until granular. Sift two cupfuls (keep out). To the remainder add spices, two eggs (beaten until creamy), milk and soda and flavoring. Spread one cup of the mixture on the bottom of the pan. Pour in batter, spread remaining cup of mixture over top. Bake thirty to forty minutes in moderate oven.

CHRISTMAS FRUIT CAKE

One-third cup butter, one and one-fourth cups sugar, four eggs, one and one-half cups apple sauce, one teaspoon soda, one teaspoon

cinnamon, one teaspoon cloves, one-fourth teaspoon nutmeg, one and one-half cups raisins (chopped), one cup chopped nuts, one cup currants, one-half cup chopped citron, one-half cup chopped pineapple (candied), two squares chocolate, four cups flour, three teaspoons baking powder, one teaspoon lemon, one-half teaspoon vanilla.

Cream butter and sugar, add egg yolks, cream well, add chocolate (melted in little hot water), then apple sauce. Sift together all dry ingredients, add to first mixture, beat well. Add fruits and nuts, chopped well and mixed with a small quantity of flour, fold in stiffly beaten whites. Bake in cake pan lined with buttered paper. Have a moderate oven, bake from one and one-half to two hours. Make a butter caramel icing or powdered sugar icing, decorate with finely chopped candied cherries.

White Mountain Icing: One cup sugar, one-third cup water, one egg white, one teaspoon vanilla. Cook sugar and water until it makes a soft ball when dropped in cold water, add slowly to beaten egg whites. Beat until smooth and stiff. Add flavoring and spread on cake.

Marshmallow Icing: Three-fourths cup sugar, one-fourth cup boiling water, pinch salt, white of one egg, one-half teaspoon vanilla. Cook sugar and water to soft ball stage. Pour slowly on to well beaten whites, beat until thick enough to spread.

Butter Caramel Icing: Two cups brown sugar, one tablespoon butter, one-fourth cup cream, one-half teaspoon vanilla. Mix ingredients, boil until it makes a soft ball when dropped in cold water, add vanilla, beat until it thickens.

Chocolate Frosting: One cup sugar, one-fourth cup hot water, one-half teaspoon vanilla, yolk of one egg, two squares chocolate. Cook sugar, chocolate and water to soft ball stage, add gradually to yolk, beating all the time, add vanilla, beat until creamy.

SIMPLE CAKES AND DOUGHNUTS

(From Iowa State College—Domestic Science Department.)

SOUR MILK GINGERBREAD (without eggs)

Three tablespoons fat, one-half cup molasses, one and three-fourths cups flour, one teaspoon ginger, one teaspoon cinnamon, one teaspoon salt, one-half teaspoon soda, one-half cup sour milk.

Melt fat, add molasses and heat. Add sifted dry ingredients; add sour milk and beat. Pour into a buttered pan and bake thirty minutes in a moderate oven.

SOUR CREAM GINGERBREAD (one egg)

Three-fourths cup sour cream, one-half cup molasses, one-half cup sugar, one egg, two cups flour, three-fourths teaspoon soda, one tablespoon ginger, two teaspoons cinnamon, one-half teaspoon salt.

Mix and sift the flour, soda, ginger, cinnamon and salt thoroughly. Beat the egg, add sugar, molasses and sour cream; add liquid mix-

ture to dry ingredients. Beat thoroughly and pour into a buttered pan. Bake in a moderate oven about thirty minutes.

SOUR MILK GINGERBREAD (two eggs)

One-half cup fat, one-half cup sugar, two eggs, one cup sour milk, one cup molasses, three cups flour, one teaspoon soda, one teaspoon ginger, one teaspoon cinnamon, one-fourth teaspoon cloves, one teaspoon salt.

Mix the fat with the sugar; add the beaten eggs, sour milk and molasses. Mix and sift the dry ingredients and add to above mixture. Bake in a moderate oven.

SOUR MILK DOUGHNUTS

One cup sugar, one cup sour milk, two eggs, one-half teaspoon salt, one teaspoon soda, three cups flour (about), one-fourth teaspoon nutmeg.

Beat the eggs, add the sugar, sour milk, salt, nutmeg and soda; add flour to make a soft dough. Roll, cut and fry in deep fat.

SOUR CREAM DOUGHNUTS

One cup thick sour cream, one-half cup sweet milk, one cup sugar, three eggs, one teaspoon soda, one-half teaspoon nutmeg, one-half teaspoon salt, flour.

Mix the milk with the sour cream. Add the sugar, beaten eggs, soda, nutmeg and salt; add flour to make soft dough. Roll, cut and fry in deep fat.

SOUR CREAM TEA CAKES

One cup sour cream, one-half teaspoon soda, one cup sugar, two eggs, one and one-half cups flour, one-half teaspoon salt, two teaspoons baking powder, one-fourth teaspoon nutmeg.

Mix the soda with the cream; add the sugar and beaten eggs. Sift flour, salt, baking powder and nutmeg together. Combine ingredients with sour cream mixture. Bake in buttered muffin pans in a hot oven.

SOUR CREAM CAKES

One cup sour cream, one teaspoon vinegar, one teaspoon soda, one cup sugar, two cups flour, two teaspoons baking powder, one-half teaspoon salt, two eggs or four whites, one-half teaspoon vanilla, one-fourth teaspoon nutmeg.

Mix the sour cream, vinegar and soda together. Beat thoroughly and add the sugar. Sift flour, baking powder and salt together. Add dry ingredients to sour cream mixture. Add the beaten eggs, vanilla and nutmeg.

DEVIL'S FOOD

One and one-half cups sugar, three-fourths tablespoon fat, two eggs, one cup sour cream, one-half cup sour milk, one teaspoon vanilla, one-half teaspoon salt, one teaspoon soda, two cups flour, two squares melted chocolate.

Cream the fat. Add the sugar and beaten eggs. Add cream, milk and vanilla. Sift the salt, soda and flour together. Combine with the sour cream mixture and add the melted chocolate. Beat thoroughly and bake.

SOUR CREAM MOLASSES COOKIES

Three-fourths cup fat, three-fourths cup brown sugar, three-fourths cup molasses, two eggs, three-fourths cup sour cream, one teaspoon soda, one teaspoon salt, one-half tablespoon ginger, one-half teaspoon cinnamon, flour.

Cream the fat, add sugar, molasses, eggs (well beaten) and sour cream. Mix and sift the soda, salt, ginger, cinnamon and one cup flour together; add flour to make soft dough. Chill and roll one-half inch thick, cut, place on buttered tin and bake in a moderate oven.

DARK SOUR CREAM COOKIES

Two cups sugar, one cup shortening, one teaspoon cinnamon, one teaspoon nutmeg, one-half teaspoon cloves, one cup sour cream, one-half teaspoon soda, flour enough to knead.

Cream shortening, add sugar, cream and dry ingredients mixed and sifted with one cup flour; add flour to make stiff enough to roll on board. Pack in tin or box lined with oiled paper and let stand over night. In the morning, turn from mould, cut in thin slices and bake.

EGGS AND MILK

(From Extension Home Economics Service, Uni. of Nebr.)

FOAMY OMELET

Three eggs, three tablespoons cold water, one and one-half teaspoons butter, three-eighths teaspoon salt.

Beat yolks of eggs until thick and lemon colored. Then add the water and salt, and fold in whites of eggs beaten until stiff and dry. Heat omelet pan, butter bottom and sides of pan, turn in mixture, spread evenly, and cook slowly until delicately brown underneath. Place in oven just a moment and fold over quickly with a knife. Place on a hot platter and serve at once.

SCALLOPED EGGS

Three hard cooked eggs, one pint white sauce three-fourths cup chopped ham, three-fourth cup buttered cracker crumbs.

Chop eggs finely. Sprinkle bottom of a buttered baking dish with crumbs. Cover with one-half the eggs, one-half the sauce, and one-half the meat. Repeat. Cover with remaining crumbs. Place in oven and bake until crumbs are brown.

EGG TIMBALES

One tablespoon butter, one tablespoon flour, two-thirds cup milk, three eggs, one tablespoon chopped parsley, one-half teaspoon salt, one-eighth teaspoon pepper, few grains celery salt.

Make sauce of butter, flour and milk; add yolks beaten until

thick and lemon colored, then add seasonings. Beat whites of eggs until stiff and dry, cut and fold into first mixture. Turn into buttered molds, set in pan of hot water, and bake in a slow oven until firm. Serve with white sauce to which has been added chopped pimentos.

SUNSHINE HAM AND EGGS

Chop cold boiled ham fine. Cook six eggs hard, chop whites, and force yolks through a ricer. Make white sauce and moisten ham with a little sauce and place on stove long enough to become very hot. Lay on platter pieces of hot toast, pile ham on this, pour over sauce, sprinkle yolks over the top and whites around outside. Serve hot.

DATE CUSTARD

Two cups milk, three egg yolks, one-half teaspoon vanilla. one-half cup sugar, one-eighth teaspoon salt, two tablespoons cornstarch.

Scald the milk, add the cornstarch, which has been mixed with a little cold milk. Cook in a double boiler twenty minutes. Add the sugar, salt and egg yolks slightly beaten. Cook slightly. Add two-thirds cup of steamed dates which have been cut up fine. Flavor and chill.

EGGS POACHED IN MILK

Butter bottom and sides of small pan and pour into this three-fourths cup scalded milk. Drop in eggs and cook to a jellylike consistency. Remove eggs, thicken milk with one-half tablespoon butter and one-half tablespoon flour worked together until thoroughly blended. Season with salt and pour over eggs.

SCRAMBLED EGGS

Two eggs, one tablespoon butter, two tablespoons milk, salt to taste.

Beat eggs slightly, add milk and salt. Heat frying pan, put in butter, when melted add mixture. Cook until of creamy consistency, stirring and scraping from bottom and sides of pan.

EGGS SHIRRED WITH TOMATOES

Press cooked tomato through a sieve. About three tablespoons will be needed for each egg to be served. Salt and pepper to taste. Let simmer until pulp is well reduced. Put a little of the puree in the bottom of an egg shirrer. Break in a fresh egg, shake a little salt and pepper over it, then add a little of the tomato puree and sprinkle with grated cheese. Let cook until egg is firm.

HOT WATER SPONGE CAKE

Three-fourths cup sugar, two eggs, one cup flour, one-fourth teaspoon salt, one and one-half teaspoons baking powder, one-half teaspoon lemon extract, one-fourth cup rapidly boiling water.

Beat eggs until very light, add sugar. beat, add salt and lemon extract, then boiling water, beating all the time. Quickly stir in the flour mixed and sifted with the baking powder. Bake in buttered pan twenty-five minutes.

CORN AND ITS USES

(Iowa State College—Extension Dept.)

The various kinds of corn are practically identical in composition and nutritive value.

AVERAGE COMPOSITION OF CORN AND CORNMEAL PRODUCTS

Kind of material	Water	Protein	Fat	Carbohydrates		Mineral matter	Fuel value per pound
				Starch sugar etc.	Crude fiber		
	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Calories
Corn, whole grain, average	10.8	10.0	4.3	71.7	1.7	1.5	1795
Corn, white	11.4	10.8	5.0	68.8	2.5	1.5	1690
Corn, yellow	11.9	10.7	4.8	68.9	2.2	1.5	1690
Cornmeal, (whole grain ground), unbolted	12.0	8.7	4.7	71.1	2.2	1.3	1850
Cornmeal (whole grain ground), bolted	12.0	8.9	4.9	72.0	1.2	1.0	1765
Cornmeal, granulated (new process)	12.5	9 2	1.9	74.4	1.0	1.0	1770

Farmers' Bulletin No. 565, page 3.

The average composition of corn is 7/10 starch, 1/10 protein, 1/10 water and 1/10 fat. crude fiber and mineral matter.

Because of the high per cent of starch and fat, corn is a cheap source of fuel food. When cornmeal is 2½ cents per pound, 10 cents worth of cornmeal yields 6540 units of heat. Ten cents worth of wheat flour at 3 cents per pound yields only 5440 units of heat. Corn is also a cheap source of protein. When cheese is 16 cents per pound, 10 cents worth of cheese yields 1185 units of heat.

Cornmeal supplies 10 per cent of the total amount of protein, 3.8 per cent of the fat and 13.7 per cent of the carbohydrates consumed by the people of the United States.

Suggestions for Combinations

Cornmeal is somewhat lacking in the protein that is essential for growth and maintenance.

Combine cornmeal with eggs, milk, cheese or meat to supply this lack.

Cornmeal is lacking in gluten.

Combine cornmeal with rye, wheat, graham or gluten flour to supply gluten.

CORNMEAL MUSH

One-half cup cornmeal, one and one-half cups water, one teaspoon salt.

Boil salted water; add cornmeal gradually and cook one hour.

USES OF CORNMEAL MUSH

1. Serve hot with milk.
2. Serve hot with butter and sugar.

3. Serve hot with syrup.
4. Cool, cut in slices and fry.
5. Add ground cooked meat.
6. Add one-half cup grated cheese.
7. Add one-half cup tomato sauce and one chopped sweet green pepper.

[NOTE—Grits may be used instead of cornmeal.]

CORN CAKE BAKED IN A FRYING PAN

One and one-third cups cornmeal, one-third cup flour, one cup sour milk, one-half teaspoon soda, two eggs, two cups sweet milk, four tablespoons sugar, three-fourths teaspoon salt.

Mix and sift the dry ingredients together; add the sour milk, beaten eggs, one cup sweet milk, sugar and salt. Beat thoroughly and pour mixture into a hot buttered frying pan. Pour over the remaining milk and bake in a moderate oven.

CORNMEAL IN YEAST BREAD

The following recipe is suggested by the Bureau of Chemistry, U. S. Department of Agriculture:

Wheat and Corn bread (four loaves): Two and two-thirds cups cornmeal, three and one-half cups cold water, two cakes compressed yeast, two cups lukewarm water, three tablespoons sugar, one and one-half tablespoons salt, two and one-fourth cups white flour, three tablespoons shortening.

Stir the cornmeal into the cold water, bring to boiling point, and cook in double boiler ten minutes. Cool. Dissolve the compressed yeast cakes in the lukewarm water and add to cornmeal mush. Sift the sugar, salt and one cup flour together, and stir into cornmeal and yeast mixture. Beat thoroughly and set to rise at temperature between 80 and 88 degrees Fahrenheit. It should be light within two hours. Beat it thoroughly, add melted shortening if desired, and add the remainder of the flour; knead thoroughly until smooth and elastic. Set to rise as before. When double in bulk, mold into four loaves, place in slightly warmed and greased pans, cover and set to rise. When double in bulk, bake in a steady oven (400 to 425 degrees Fahrenheit) for forty-five to fifty minutes.

CORNMEAL AND RICE GRIDDLE CAKES

One-half cup cornmeal, one-half cup flour, one-half teaspoon soda, one teaspoon salt, one cup sour milk, one cup cold boiled rice, two eggs.

Mix the dry ingredients together; add sour milk and rice to beaten egg yolks; stir into the dry ingredients; fold in the beaten egg white. Fry on hot griddle.

CORNMEAL AND APPLE PUDDING

One-half cup cornmeal, one quart milk, one teaspoon salt, one teaspoon ginger, one-half cup molasses, two cups apples (cored and cut in eighths).

Scald the milk and add the cornmeal; cook for thirty minutes and add the salt, ginger and molasses. Pour in a buttered baking dish, bake for one hour, stirring occasionally; add the apples and bake one hour longer without stirring. Serve with cream or pudding sauce.

CORNMEAL AND PUMPKIN PONE

One quart well cooked pumpkin, one cup cornmeal, two cups sweet milk, one tablespoon salt, one cup sugar, one teaspoon soda.

Stir the cornmeal into the hot pumpkin; then add milk, salt and sugar. Add enough more cornmeal to make the mixture stiff enough that it will hold its shape when dropped from the spoon. Then stir in soda (dissolved in boiling water). Bake an hour and a half or longer. The longer it bakes, the sweeter it seems.

Green Corn

COMPOSITION—EDIBLE PORTION

	Per cent
Water	75.4
Protein	3.1
Fat	1.1
Carbohydrates	19.7
Calories	459

Uses of Green Corn

Soups, chowders, souffles, timbales, patties, scalloped dishes and custards.

GREEN CORN CUSTARD

One cup corn (cut from the cob), three eggs, one-half teaspoon salt, one-eighth teaspoon paprika, a few drops onion juice, one and one-half cups milk.

Beat the eggs slightly and add the other ingredients. Bake in buttered moulds, surrounded by water.

SUCCOTASH

Two cups corn (cut from the cob), two cups boiled shelled beans, three-fourths teaspoon salt, pepper, two tablespoons bacon fat.

Add the corn, salt and pepper to the boiled shelled beans; cook ten minutes; add the bacon fat and serve.

Uses for Dried Corn

Soak corn in cold water until soft and plump. Simmer until kernels are tender.

RECIPE

One cup dried corn, three cups cold water, one and one-half teaspoons salt, one-eighth teaspoon pepper.

Cook corn as directed above. Add salt and pepper.

Variations of Recipe

1. Add one cup milk, one-half cup bread crumbs, one tablespoon onion or parsley.
2. Add one beaten egg, one tablespoon parsley.
3. Add one cup ground, cooked meat.
4. Add one cup cooked beans.
5. Add one-half cup chopped celery leaves.
6. Add one cup cooked potato cubes, one-half cup flaked codfish, one cup milk.

PLAIN COOKED HOMINY

Two cups home made hominy, two tablespoons bacon fat, one teaspoon salt, one-fourth teaspoon pepper.

Heat thoroughly and serve.

Variations of Recipe

1. Add one-half cup milk.
2. Add one chopped onion.
3. Add one cup chopped meat.
4. Add two cups cornmeal mush, two eggs, one cup milk, one teaspoon salt. Bake until firm.

HOMINY BALLS

One quart boiled hominy, one egg, two tablespoons cold water, bread crumbs.

Shape boiled hominy in balls; roll in bread crumbs, dip in the beaten egg diluted with cold water, and roll again in crumbs. Fry in deep fat. Serve as a vegetable with meat.

[NOTE—If one-half cup of cheese is added, it may be served in place of meat. The plain hominy balls may be served with syrup as a breakfast dish or for dessert.]

Cornstarch

COCOANUT BLANC MANGE

One-fourth cup cornstarch, one-fourth cup sugar, one-fourth cup cold water, two cups milk, two eggs, three-fourths cup shredded cocoanut or other ground nuts, one-half teaspoon vanilla.

Mix the cornstarch, sugar and water together; add to the scalded milk; cook until thick, smooth and glossy. Fold in the beaten egg whites and cocoanut and flavor with vanilla. Chill in moulds wet in cold water. Serve with cream or custard made with yolks of eggs.

APPLE SOUFFLE

Four tart apples, four tablespoons cornstarch, one tablespoon flour, one-fourth cup cold water, one-fourth teaspoon salt, one cup boiling water, one tablespoon butter, one teaspoon lemon, one-eighth teaspoon nutmeg, three eggs, sugar.

Pare, core and cook apples; rub through a coarse sieve. Blend the flour and cornstarch in cold water; add the butter, salt and corn-

starch mixture to the boiling water; cook until thick, smooth and glossy; add the apple pulp, nutmeg, lemon juice and sugar to sweeten. Remove from fire and add the beaten egg yolks. Fold in the beaten whites. Bake in a moderate oven until firm and brown.

Miscellaneous Corn Recipes

(Nebr. Extension Service.)

INDIAN PUDDING

Five cups milk, one-third cup cornmeal, one-third cup molasses, one teaspoon salt, one teaspoon ginger.

Cook milk and meal in a double boiler twenty minutes. Add molasses, salt and ginger; pour into a buttered pudding dish and bake two hours in a slow oven. Serve with cream.

CORN CHOWDER

One can corn, two cups potatoes (cut in one-fourth inch cubes), three slices bacon, one sliced onion, two cups scalded milk, salt and pepper.

Cut bacon into small pieces and cook until hot. Add onion, cook five minutes, stirring frequently. Parboil potatoes five minutes in boiling salted water. Drain and add potatoes to fat. Add two cups boiling water. Cook until potatoes are soft. Add corn, heat thoroughly and then add milk (which has been heated in a double boiler). Serve at once with croutons, or broken crisp crackers may be added.

CORN A LA SOUTHERN

One can corn, one egg and two tablespoons flour, one teaspoon salt, one-eighth teaspoon pepper, one and one-half tablespoons butter, one pint milk.

To the corn add egg, beaten with flour, salt, pepper, melted butter and scalded milk. Turn into buttered baking dish and bake until firm.

CORN FRITTERS

One egg (beaten separately), one-half cup milk, one cup flour, one-half teaspoon salt, two teaspoons sugar, one cup corn (freshly cut from cob or well drained), one tablespoon melted butter.

Mix and sift dry ingredients, add yolks (beaten until thick and lemon colored), with milk, then melted butter, corn, and finally fold in the well beaten white.

CORNSTARCH PUDDING

One quart milk, one-fourth teaspoon salt, six tablespoons cornstarch, two egg yolks or one whole egg, one-half cup sugar.

Two squares of chocolate may be added. Corn flour may be substituted for cornstarch, using eight tablespoons flour.

[NOTE—Cornmeal breads, see "Quick Breads."]

PLAIN PATTERNS IN COOKERY

(From Iowa State College, Home Economics Department.)

Many housewives, especially those who have had little experience in cooking, are dependent upon the cook book to such a degree that they are unable to prepare a dish without it. It is unfortunate that this is true, for often much time and effort are spent searching for certain recipes which are not at all difficult if the fundamental principles are understood. There are certain underlying principles which govern all recipes. These principles may be worked out in a system of plain patterns which may form the basis of much of the cooking.

Plain Patterns

I, Custards; II, Sauces; III, Timbales; IV, Souffles; V, Soft Doughs.

I. Custards

CUSTARD PATTERN

Two cups scalded milk, two or three eggs (according to size), one-eighth teaspoon salt.

Beat eggs slightly, add salt and hot milk.

SOFT CUSTARD

Custard pattern, one-fourth cup sugar, one-half teaspoon vanilla.

Add sugar to custard pattern and cook in a double boiler, stirring constantly until mixture coats the spoon. Add vanilla. Cool quickly.

BAKED CUSTARD

Custard pattern, one-fourth cup sugar, a little grated nutmeg.

Add sugar to custard pattern and sprinkle nutmeg over the top. Bake in a dish set in a pan of hot water until firm. Cool quickly.

CHEESE CUSTARD

Custard pattern, one-half cup grated cheese, one-half teaspoon salt.

Add cheese and salt to custard pattern. Bake as for baked custard.

MEAT CUSTARD

Custard pattern, one cup cooked ground meat, one-half teaspoon salt, one tablespoon chopped parsley.

Add meat, salt and parsley to custard pattern and bake as for baked custard.

RICE CUSTARD (with meat)

Custard pattern, one cup cooked rice, one-half cup cooked ground meat, two tablespoons grated cheese, one-half teaspoon salt.

Add rice, meat, cheese and salt to custard pattern. Bake as for baked custard.

RICE CUSTARD (sweetened)

Custard pattern, one-fourth cup sugar, one cup cooked rice, one-half teaspoon vanilla.

Add sugar, vanilla and rice to custard pattern. Bake as for baked custard. Cool quickly.

BREAD AND CHEESE SANDWICH

Custard pattern, three-fourths teaspoon salt, four slices buttered bread, one-half cup grated cheese.

Add salt to custard pattern. Place bread in layers, each sprinkled with cheese. Pour custard over bread and bake as for baked custard.

BREAD AND FRUIT SANDWICH

Custard pattern, one-fourth cup sugar, four slices buttered bread, one-half cup chopped raisins, dates or figs.

Add sugar to custard pattern. Arrange bread and fruit in layers and pour custard over. Bake as for baked custard.

II. Sauces

SAUCE PATTERN

One tablespoon fat, one tablespoon flour, one-half teaspoon salt, one-eighth teaspoon pepper, one cup liquid.

Melt fat, add flour and cook thoroughly. Add liquid and cook until smooth, thickened and glossy.

MEDIUM WHITE SAUCE

Sauce pattern, one tablespoon fat, one tablespoon flour.

Add fat and flour to sauce pattern.

VEGETABLE SAUCE

Sauce pattern, one tablespoon fat, one tablespoon flour.

Add fat and flour to sauce pattern. Use one cup vegetable stock for liquid.

MEAT SAUCE

Sauce pattern, one tablespoon fat, one tablespoon flour.

Add fat and flour to sauce pattern. Use one cup meat stock for liquid.

TOMATO SAUCE

Sauce pattern, one tablespoon fat, one tablespoon flour, two cloves, one slice onion, one-fourth bay leaf.

Add fat and flour to sauce pattern. Use one cup tomato (heated with onion, cloves and bay leaf and strained) for liquid.

GRAVY

Sauce pattern, one tablespoon flour, one-half teaspoon salt.

Add fat from meat in making sauce pattern and add flour and salt. Water, milk or meat juice may be used as liquid.

PUDDING SAUCE

Sauce pattern, salt and pepper, one tablespoon flour, one-fourth cup sugar, one tablespoon vinegar or lemon juice.

Combine as in sauce pattern, using flour and sugar. Cook until thickened and smooth. Add vinegar.

CREAM OF TOMATO SOUP

Part I: Sauce pattern, one tablespoon fat, one tablespoon flour.

Add fat and flour to sauce pattern made with milk.

Part II: One cup strained tomatoes, one teaspoon sugar, one sliced onion, two cloves, one-fourth bay leaf, one-eighth teaspoon soda.

Heat Part II (except soda). Add soda and strain into sauce. Beat thoroughly and strain at once.

VEGETABLE SOUP

Sauce pattern, one-half cup vegetable pulp, one cup liquid, salt and pepper.

Make sauce pattern with milk, add vegetable pulp and salt. Heat.

[NOTE—Potatoes, peas, onions, celery and other vegetables may be used. Leftover vegetables are conveniently used in this way, even though only a small amount may be at hand.]

III. Timbales

TIMBALE PATTERN

Two eggs, two tablespoons fat, one teaspoon salt, one-eighth teaspoon pepper, one-half cup liquid.

Beat eggs, add seasonings, melted fat and liquid. Combine with other ingredients, turn into buttered cups, set in pan of hot water and bake until firm.

SPINACH TIMBALES

Timbale pattern, one and one-half cups spinach pulp.

Use timbale pattern with spinach pulp.

PEA TIMBALES

Timbale pattern, one pint cooked peas.

Heat, drain and mash peas and combine with timbale pattern.

CARROT TIMBALES

Timbale pattern, one and one-half cups grated carrot, one-third cup bread crumbs.

Steam carrots until tender. Combine with timbale pattern.

[NOTE—Any vegetable pulp may be used. This is a convenient way of using a small amount of leftover vegetables. Meat and fish may be combined with vegetables in timbales.]

IV. Souffles

SOUFFLE PATTERN

Three eggs, one-half cup medium white sauce, one-third cup

cooked cereal (or bread crumbs), one teaspoon salt, one-eighth teaspoon pepper.

Beat yolks of eggs until thick and lemon colored. Add white sauce, cereal, salt, pepper and other ingredients. Beat egg whites stiff and combine with first mixture. Bake in a moderate oven until firm.

ONION SOUFFLE

Souffle pattern, one and a fourth cups onion pulp, two tablespoonfuls chopped parsley.

Follow directions for souffle pattern.

MEAT AND VEGETABLE SOUFFLE

Souffle pattern, one cup cooked chopped meat, one-half cup cooked vegetables, parsley.

Follow directions for souffle pattern.

V. Soft Doughs

BAKING POWDER BISCUIT PATTERN

Two cups flour, four teaspoonfuls baking powder, one teaspoonful salt, three tablespoonfuls fat, three-fourths cup milk or water.

Mix and sift dry ingredients. Work in shortening and add liquid to make a soft dough.

MEAT ROLLS

Baking powder biscuit pattern, one cup cooked, chopped meat moistened with meat stock.

Roll biscuit dough on board one-half inch thick and cut as for biscuits. Butter one-half of each side and spread with meat mixture. Fold over and press edges together. Bake in hot oven.

CHEESE BISCUIT

Baking powder biscuit pattern, one-half cup grated cheese.

Add cheese to biscuit pattern with shortening. Roll dough on board (one-half inch thick) and cut with biscuit cutter. Bake in hot oven.

SURPRISE BISCUIT

Baking powder biscuit pattern, dates, figs, prunes or raisins.

Roll on board and shape as biscuit. Fold each biscuit over one tablespoonful chopped fruit and press flat between palms. Bake in hot oven.

FRUIT PUDDING

Baking powder biscuit pattern, one pint can cherries (or other fruits).

Drain cherries from juice. Add to biscuit pattern before adding liquid. Use enough water to make a soft dough. Place in buttered steamer and steam from one to two and a half hours (according to the size of the dish used). Serve with a sauce made from the cherry juice.

FRUIT PUFFS

Baking powder biscuit pattern, four tablespoonfuls finely cut dates or figs, four tablespoonfuls chopped nuts, four tablespoonfuls sugar, one-half tablespoonful cinnamon, two tablespoonfuls butter.

Pat dough out into a sheet (one-half inch thick) on board. Spread with butter (melted) and sprinkle with sugar, nuts, cinnamon and fruit. Roll as for cinnamon roll and cut into eight pieces. Flatten on greased tin and bake in a hot oven. (These puffs may be served as a pudding with a lemon sauce).

PEANUT BUTTER BISCUIT

Baking powder biscuit pattern, four tablespoonfuls peanut butter, peanuts.

Mix peanut butter with two tablespoonfuls of the milk in combining with the biscuit pattern, then mix with the other ingredients as in pattern recipe. Place a half peanut on each biscuit and bake.

PRESERVES, JELLIES, ETC.

(University of Nebraska, Agricultural Extension Service).

ORANGE MARMALADE

Choose sour oranges. Wash thoroughly both the oranges and lemons. Slice very thin into separate dishes. To four parts orange by weight add one part lemon. Add one and a half times as much water as the combined weight of orange and lemon. Boil gently for thirty to forty-five minutes, counting from time it boils. Allow the mixture to stand for twenty-four hours or until thoroughly cooled. Weight the fruit and water mixture. To one part of the mixture add one and a fourth parts sugar. Boil gently for thirty to forty-five minutes, counting from the time it begins to boil.

RHUBARB CONSERVE

Four pounds rhubarb, five pounds sugar, one pound seeded raisins, two oranges, one lemon.

Wash and peel the stalks of rhubarb and cut into one-inch pieces. Put in kettle, sprinkle with sugar, and add raisins, grated rind and juice of oranges and lemons. Mix, cover and let stand for one-half hour. Place on the stove. Bring to boiling point. Let simmer for forty-five minutes, stirring almost constantly. Pour into glasses and seal.

RHUBARB AND ORANGE MARMALADE

Six cups rhubarb cut into one-inch pieces, two oranges, six cups sugar.

Cut the oranges into thin slices or put through a food grinder, add the rhubarb and sugar. Cook until the mixture thickens. Pour into glasses and seal. Strawberries, peaches or pears may be used instead of oranges.

Use four cups strawberries to six cups rhubarb. Use six cups of

peaches to six cups rhubarb. Use four cups of pineapple to six cups of rhubarb.

APPLE JELLY

Cut slightly unripe apples into pieces without paring or coring. Barely cover with water, cover the kettle and boil slowly until the apples are very tender. Drain through a jelly bag without squeezing. Allow one pound granulated sugar to every pint of juice. Boil the juice rapidly for fifteen minutes, add the warmed sugar, and continue boiling until the jelly test is obtained. Turn into sterile glasses.

MINT JELLY

Wash fresh mint leaves thoroughly. To one cup mint leaves (packed solid), add one cup boiling water and let steep for one hour in a warm place. Press out all moisture by means of a piece of cheesecloth. To one cup apple extract add one or two tablespoonfuls mint juice, color green with vegetable coloring matter and proceed as for apple jelly.

SWEET PICKLES—CUCUMBER OR WATERMELON

Four cups sugar, two tablespoonfuls cinnamon, one tablespoonful whole cloves, two cups vinegar.

Pare and cut into strips the rind of ripe melons. Soak in alum water to cover, allowing two teaspoonfuls alum to one quart water. Heat gradually to the boiling point and cook for ten minutes. Drain, rinse in ice water, dry and cook in the vinevar, sugar and spices until tender. Put into jars.

CRANBERRY AND RAISIN RELISH

Three pounds cranberries, three pounds seeded raisins, five oranges, three pounds sugar.

Run the berries, raisins and orange peel through a meat chopper and add the orange pulp and sugar. Mix well, boil up quickly, and let simmer for three hours. Nuts may be added, if desired.

CHOWCHOW

Two quarts green tomatoes, twelve cucumbers, four green peppers, one small head cabbage, six onions, one quart string beans.

Chop up the vegetables, mix well and put a layer of the mixture into a stone jar and sprinkle well with salt. Continue until the vegetables are used, covering the last layer with salt. Let stand over night; drain, and add to a boiling hot mixture consisting of the following: One gallon vinegar, one tablespoonful mustard and one tablespoonful celery salt.

GRAPE JUICE

Extract the juice from grapes by heating them in a double boiler until the skins break. Drain through a cheesecloth. Sterilize by boiling one second, then pour into clean bottles and seal with sterile cotton or a cork covered with paraffine.

Mincemeat

Two pounds chopped meat, one pound suet, three pounds raisins, three pounds currants, two and a half pounds brown sugar, one and a third cups molasses, three quarts chopped apples, one-half quart meat liquor, two tablespoonfuls salt, three tablespoonfuls cinnamon, two teaspoonfuls mace, two teaspoonfuls powdered cloves, four lemons (grated rind and juice), one piece (a quarter) of citron (shredded fine).

Cook about two and a half pounds of the round, flank or shoulder of beef in one and a half quarts of water until tender, saving the liquor. Chop or grind the meat fine, being careful to remove all gristle. If the meat is very fat, use less suet. Mix the ingredients in the order given and cook slowly until the fruit is tender. When done, add one quart sweet cider. Store in some jars in a cool place. Add more cider when using, if it is not sufficiently moist.

SANDWICHES

(From University of Nebraska, Home Economics—Advanced Short Course Demonstration Sheet).

1. Cut slices of bread as thinly as possible.
2. If butter is used, always cream it and spread bread before cutting from the loaf.
3. Sandwiches in which the filling is very moist should be made just before serving.
4. Sandwiches prepared several hours before serving may be kept fresh by wrapping in a napkin wrung as dry as possible out of hot water.

Filling

1. Meat, chopped, seasoned with salt, pepper, prepared mustard, lemon juice or vinegar. Add enough melted butter to hold the mixture together.
2. Ham or veal and hard-cooked eggs, chopped, seasoning as in (1).
3. Ham and mustard pickles, chopped fine.
4. Beef and celery chopped fine, or celery, salt and catsup.
5. Meat—any kind and salad dressing.
6. "Tourist," yolks of hard-cooked eggs, mashed sardines, minus bones and skins, lemon juice and stuffed olives.
7. Peanut butter mixed with salad dressing and milk.
8. Walnuts, olives and celery mixed with cooked dressing.
9. Twenty-four olives, one tablespoonful catsup, one-half tablespoonful mustard, one-half cup celery and one-half cup mayonnaise.
10. Cream cheese, seasonings, chopped nuts and mayonnaise.
11. Cream cheese and pimiento.
12. Mayonnaise and pimiento, with lettuce.
13. Steamed dates and nuts and lemon juice.
14. Marmalade or jelly.
15. Figs, nuts and lemon juice.

16. Dates, apples and salad dressing.
17. Chopped peanuts and salad dressing.
18. Cheese and olives chopped and mixed with salad dressing.
19. Cheese and dried beef, ground, mixed with thick tomato pulp. seasoned and boiled to a paste.

AFTERNOON AFFAIRS

(University of Nebraska, Agriculture Extension.)

Menu No. I

Chicken Salad — Cheese Biscuits

Coffee

Menu No. II

Olive and Nut Sandwiches — Cheese Wafers

Stuffed Dates — Turkish Delight

Cocoa

CHICKEN SALAD

Two cups diced chicken, one-half cup celery, two tablespoonfuls pickles, one-half cup nuts, season to taste.

Place diced chicken in bowl, add celery cut rather fine, then chopped pickles and nuts broken fine. Pour over salad dressing and toss together with fork. Serve on lettuce leaf with more dressing on top.

CHEESE BISCUIT

Two cups flour, five teaspoonfuls baking powder, one teaspoonful salt, one-half cup grated cheese, one tablespoonful lard, three-fourths cup milk, one tablespoonful butter.

Sift dry ingredients, cut in shortening and cheese, add milk. Roll one-half inch thick, cut with biscuit cutter. Bake in a moderate oven.

BOILED COFFEE

One cup coffee, one cup cold water, one egg, six cups boiling water.

Wash egg, break and beat slightly. Dilute with one-half the cold water, add crushed shell, and mix with coffee. Put in coffee pot, pour on boiling water and stir thoroughly. Place on stove and boil three minutes.

OLIVE AND NUT SANDWICH

Make thick boiled dressing. Add chopped nuts and olives in equal parts. Cut slices of whole wheat bread and white bread. Place mixture between slices of bread, being one side white and the other dark. Trim edges and pile on sandwich plate.

CHEESE WAFERS

Place common soda crackers on baking sheet; on each cracker put a fresh marshmallow. Sprinkle liberally with grated cheese. Then put maraschino cherry on top. Place in oven and bake until marshmallow puffs.

STUFFED DATES

Make a cut the entire length of dates and remove stones. Fill the cavities with nuts and shape in original form. Roll in granulated sugar.

TURKISH DELIGHT

Three tablespoonfuls gelatine, two cups sugar, one-half cup hot water, grated rind of one orange, one-half cup cold water, two tablespoonfuls lemon juice, four tablespoonfuls orange juice.

Soften gelatine in the cold water. Bring sugar and hot water to boiling point. Add gelatine and boil twenty minutes without stirring. Add orange rind and juice and lemon juice. Skim. Rinse pan in cold water, pour in syrup. When cool cut candy in squares and roll in powdered sugar. Candied fruits or nuts may be added when the candy has partly cooled.

COCOA

One and a half teaspoonfuls cocoa, one and a half teaspoonfuls sugar, few grains salt, two tablespoonfuls boiling water, two-thirds cup milk.

Mix cocoa, sugar and salt, add water gradually while stirring constantly. Bring to boiling point and let boil one minute. Turn into scalded milk and beat one minute, using Dover egg beater. Serve with marshmallow in each cup.

THE EMERGENCY SHELF

(University of Nebraska, Extension Service.)

Canned Foods

Peaches	Corn	Spinach
Pears	Sweet potatoes	Chicken
Cherries	Peas	Tunny fish
Pineapple	Lima beans	Salmon
Apples	Asparagus	Soups
Baked beans	Tomatoes	

Miscellaneous Foods

Canned fruit juices
Jellies, jams, conserves, etc.
Grape juice
Honey
Cookies
Fruit cake
Dates
Raisins
Currants
Dried fruits
Cocoa (cooked in water and sweetened)
Egg powder
Gelatine
Dried beef
Ham
Shredded codfish
Soup stock
Instant coffee
Junket tablets
Bouillon cubes
Grated cheese
Spices for soup (tied in cheese cloth bags)

Nuts	Browned flour
Marshmallows	Salad dressing
Macaroni	Crackers
Spaghetti	Caramelized sugar
Peanut butter	Bread crumbs

THE FEEDING OF CHILDREN

(University of Nebraska, Agriculture Ex. Ser., Home Eco. Dept.)

The First Year

Mother's milk is best.

It contains the right ingredients in the right proportion for the development of the child. It is practically free from disease germs, and is of uniform temperature and composition. The breast-fed baby has a better chance for life than the bottle-fed baby.

The diet of the nursing mother should be light, abundant, and appetizing. Include eggs, green vegetables, and ripe fruits. Include one quart of milk a day. Avoid foods which cause indigestion, as heavy desserts and fried or underdone foods. Sunlight, fresh air and plenty of water to drink are essential to the nursing mother.

Give the baby plenty of water to drink. Boil the water and then cool it.

If the mother cannot nurse the child, give cow's milk. Modify it according to the physician's directions. Never give medicine to a child without consulting your physician. Many patent medicines and soothing syrups contain habit-forming drugs.

Basis of Dietary Through the Second Year.

One quart of milk a day, strained cereals, egg yolks, stale bread (toast), fruit juice, (a) orange, (b) ripe peach, (c) strawberry; cream, butter.

Basis of Dietary Through the Third Year

One quart of milk a day, cream, butter, cereals, unstrained but thoroughly cooked, eggs, stale bread, fruit pulp, (a) grapes, (b) pineapples, (c) prunes, (d) apples, (e) oranges, peaches, strawberries. Vegetables, strained, (a) spinach, (b) carrots, (c) peas, (d) celery, (e) beans, (f) asparagus. Omit strongly flavored vegetables.

Suggestive Diet for Child Who Will Not Drink Milk.

Age five years—(One quart of milk concealed in the menu): Breakfast, 7:30, oatmeal, one-fourth cup cereal cooked in one cup milk, creamy egg on toast, one egg yolk with one-half slice toast and one-fourth cup milk.

10:30 a. m.—cocoa, one teaspoonful and one-fourth cup milk, toast and cream, one piece toast and one tablespoonful cream.

Dinner, 1:30 p. m. Spinach soup, one-half cup, baked potato, one potato and two tablespoonfuls cream; bread and butter, junket, one and one-half cup.

Supper, 5:30 p. m.—Rice and prunes, two tablespoonfuls rice cooked in one-half cup milk, toast.

Foods to Be Avoided Until the Child Reaches the Sixth Year.

Fried meats
Fried vegetables
Green corn
Eggplant
Turnips
Cucumbers
Radishes
Cabbage
Hot bread or hot rolls
Rich cakes
Griddle cakes
Pie
Doughnuts
Tea
Coffee

When children are constipated, do not dose them with medicine, but give them more vegetables, ripe fruit, stewed prunes, oatmeal, molasses gingerbread, rye bread, and graham bread. Avoid wheat bread and crackers. If persistent, call a physician.

Menu for Child Five to Twelve Years Old.

Breakfast—Oatmeal mush, top milk, toast, stewed prunes, milk to drink.

Dinner—Baked fish, creamed potatoes, spinach, bread and butter, rice pudding.

Supper—Pea soup, baked potato, boiled onions, bread and butter, molasses cookies.

General Rules In Planning Meals for Children

Use coarse breads, milk, eggs and butter freely; use bacon and fish freely; supply fresh fruits and green vegetables; use sugar in moderation; avoid rich, highly seasoned foods.

Habits of Eating

Insist that the child learn to eat breakfast; teach the child to eat slowly and to masticate his food well; insist upon regularity in meals.

RECIPES FOR CHILDREN'S FOOD
(Uni. of Nebraska Agric. Ext.)

BARLEY OR OATMEAL WATER

Use 2 tablespoonfuls of grain to a quart of water. The grain should have been previously soaked over night or at least for a few hours, or, for an emergency, the grain may be boiled for five minutes instead. The water in which the grain was soaked should be poured off and fresh water added, before cooking. The grain should be boiled for several hours, water being added from time to time to keep quantity up to a quart. Strain. This makes a somewhat thin, watery gruel.

BARLEY JELLY

Prepare grain as directed for barley water. Use from 4 to 6 tablespoonfuls of grain to 1 quart of water. Boil thoroughly for several

hours until grain is thoroughly cooked. Strain and cool. The jelly when hot should be just thick enough to pour.

OAT JELLY (116 CALORIES)

1-3 cup rolled oats 1½ cup boiling water. ¼ teaspoonful of salt.

Add oats mixed with salt to boiling water gradually. Boil 2 minutes, then steam in double boiler 45 minutes to 1 hour. Force through fine strainer, mould, chill, and serve with sugar and cream.

CREAM OF WHEAT (IN MILK)

Scald 2 cups milk, add 1 tablespoon salt and add gradually 4 tablespoonfuls cream of wheat, stir until thick, cook over flame 5 minutes, then cook in double boiler one hour.

CREAM OF WHEAT

1 Cup Cream of Wheat 5 Cups Boiling Water
1 T. Salt

Put into inside of a double boiler, water and salt,, place directly on stove, when boiling, stir in cream of wheat slowly, boil five minutes, put into outside of double boiler and cook one hour.

RICE

Cook as cream of wheat, using 2 or 3 cups of water, (as needed) in place of five.

SPINACH SOUP (PUREE)

2 T. Chopped Cooked Spinach ½ T. Butter
1-3 Cup White Stock 1 T. Flour
1-3 Cup Milk Salt and Pepper

Add spinach to stock, heat to boiling point, rub through a sieve. Thicken with butter and flour cooked together, add milk and seasonings, reheat, strain; and serve. The water in which a fowl or chicken is cooked makes white stock.

JUNKET

3-4 Cup Milk ¼ Junket Tablet
1 T. Sugar 1 T. Cold Water
¼ T. Vanilla Few Grains Salt

Heat milk until lukewarm, add sugar, salt, flavoring, and tablet dissolved in cold water. Pour quickly into small moulds, let stand in a warm place until set, then put in a cold place to chill. Serve with or without sugar and cream. If needed in a hurry, double amount of Junket. Sugar may be omitted if desired.

RUSKS (ZWIEBACH)

½ Cup Milk ¼ Cup Melted Butter
2 Yeast Cakes 3 Eggs
½ T. Salt Flour
¼ Cup Sugar

Scald milk, when lukewarm add yeast cakes, as soon as dissolved add salt and 1 cup flour. Cover, let rise until light, add sugar,

butter, unbeaten eggs and flour enough to handle. Knead, shape, place close together in two parallel rows two inches apart on a buttered sheet. Let rise again, bake in hot oven 25 minutes. When cold cut diagonally in one-half inch slices, and brown in a slow oven.

MILK TOAST

2 Slices Dry Toast
¼ t. Salt
3-4 T. Butter
3-4 Cup Scalded Milk

Butter bread, arrange on hot dish, pour over milk to which salt has been added.

ORANGE JUICE

Be sure the juice is free from pulp and seeds.

PRUNE PULP

Cook prunes until soft, press through medium coarse strainer.

BAKED APPLES

Wipe, core, and pare sour apples, put in earthen or granite ware making dish, put in cavities 1 teaspoonful sugar, allow six drops lemon juice to each apple, then cover bottom of dish with boiling water, bake in hot oven until soft, basting every 8 minutes with syrup in dish. Serve hot or cold, with or without sugar and cream; a little nutmeg may be added to sugar during making if desired.

BEEF JUICE

Broil a piece of round very lightly, cut in pieces, press in lemon squeezer until all juice is taken out, add salt.

CHICKEN BROTH

3 lb. Chicken
1 t. Salt
3 Pints Cold Water
2 T. Rice

Clean chicken ,wipe with cloth and cut in pieces at joints. Cover with cold water, soak 20 minutes and bring slowly to boiling heat, then simmer slowly for five hours. Add well cooked rice after broth is skimmed and reheated.

MUTTON BROTH

2 lb. Lamb or Mutton
3-4 t. Salt
5 Cups Cold Water
1½ T. Cooked Rice

Make same as chicken broth, add one and one-half tablespoonfuls well cooked rice after broth is skimmed and reheated.

SOFT COOKED EGGS

Put egg in sauce pan of hot water, cover, keep hot but do not let boil, for six and one-half minutes to eight minutes. Remove egg from shell into a warm cup, add little butter and a few grains of salt.

INVALID COOKERY

(Uni. of Nebr. Ext. Service)

NECESSITY FOR PROPER FOOD

The feeding of people who are well is of great importance but the selection of proper food for one who is ill is of infinitely greater importance because the body tissue is being broken down very rapidly. In acute cases of disease food is one of the greatest factors in recovery. The quantity and kind taken must vary greatly, according to the nature of the disease. Food must be avoided that will over tax the digestion or disagree with any condition of the patient; food must be digested and assimilated to be of value. In health the appetite is a safe guide to follow but in sickness it is not always wise to consider its cravings. Some patients may have an abnormally large appetite, which must be restricted, as over-feeding would prove dangerous; while with others the appetite needs to be stimulated.

Milk is one of the most valuable foods in sickness, not only because it supplies so many body needs, but because it can be used in so many ways—hot, or cold, flavored or plain, made into junkets or sherbets or combined with eggs in eggnogs and custards, in some form or other milk can almost always be made digestible. Eggs are also of great value, not only poached and served on toast but as dainty omelets or in beverages, as eggnog or egg lemonade. Mild fruit juices are not only refreshing but of considerable fuel value. If there is fever, chicken, lamb chops, tender broiled steak or roast beef may serve to add variety to the menu. Broths stimulate the appetite and help digestion but they are of little or no food value themselves. Cereals, eggs, and milk may be added to increase their food value. Vegetables are best given rather sparingly, and only mild flavored ones, such as spinach or asparagus, if digestion is much disturbed.

PRINCIPLES OF FEEDING IN SICKNESS

Nurses should remember that it is important to give foods regularly, except when a patient is sleeping.

Do not ask a patient what he wishes to eat but ascertain, if you can, what he likes best.

All changes of diet must be gradual. Never serve a new variety of food to one who is seriously ill without first consulting the doctor and gaining his permission.

Do not serve twice cooked food to invalids.

Always serve very simple foods; be especially careful to avoid highly seasoned or spicy foods. Appeal to the sense of sight and taste but consider most of all digestibility and nutritive value.

Serve hot things hot and cold things cold.

Serve in small amounts and in courses.

ARRANGEMENT OF AN INVALID'S TRAY

In arranging an invalid's tray be very careful to use the nicest china that the house affords and spotless white linen. The appearance of the tray may aid greatly in stimulating the patient's appetite. If possible have a flower or a few green leaves on the tray.

The tray should be of a size to hold easily any dishes placed upon it. Cover it with a clean linen doily; a napkin may be folded and used for this purpose. In case of contagious diseases paper doilies may be used in serving and afterwards burned. In setting a tray first locate the plate; place the knife at the right of plate, sharp edge towards the plate. Place the spoon at the right of knife, bowl up. Place the fork at the left of plate, tines up. The napkin is always placed at left of fork; then the cup and saucer at right of spoon, with the cup so placed that it may be easily raised by the handle. The water glass is placed over the knife, a little to the right. Arrange the other dishes to suit the convenience of the patient.

DIET IN SICKNESS

Conditions vary so that is is quite impossible to prescribe any particular diet for any particular disease. The food must always be given strictly according to the doctor's wishes. Invalid foods however, may be divided into three classes as follows:

LIQUID DIET

Milk
Broths
Albumen drinks
Eggnog
Gruels
Cream Soups
Beverages (Cocoa, Etc.)

LIGHT OR SOFT DIET

Cream Soups
Soft-cooked Eggs
Milk Toast
Cereals
Soft Custards
Junket
Creamed Chicken
Light Puddings
Gelatine Desserts, Etc.

CONVALESCENT DIET

Soups
Broiled Tender Meats and Fish
Baked or Creamed Potatoes
Light Vegetables
Cooked Fruits
Baked Custards
Light Desserts
Simple Salads

FOODS TO AVOID FOR INVALIDS AND CHILDREN

Pastry
Rich Cakes
Veal
Pork
Sausage
Any Fried Food
Hot Breads
Baked Beans
Tea and Coffee

TYPICAL LAXATIVE FOODS

Oranges	Spinach
Lemons	Asparagus
Molasses	Tomatoes
Apples	Onions
Prunes	Coarse Breads
Berries	Coarse Cereals
Raisins	Bacon
Figs	Oatmeal
Dates	Butter
Grapes	Cream
Chocolate	Buttermilk
Honey	Olive Oil

FOODS TO BE AVOIDED IN CHRONIC CONSTIPATION

Eggs	Starchy Vegetables
Milk	Pickles
Pastry	Tea
Starchy Puddings	Coffee
Fried Foods	Cheese
Rich Gravies	Bananas

COOKERY FOR THE SICK AND CONVALESCENT

(University of Nebraska, Extension Services, Advance Short Course.)

LACTONE

Add lactone tablets to milk (for amounts see directions on box). Allow to stand from 24 to 48 hours before using. Used in place of buttermilk.

CURRANT JELLY WATER

2 T. Currant Jelly
1 T. Lemon Juice
½ C. Cold Water

Beat jelly before measuring, add water gradually, add lemon juice. Strain and serve. Other jellies may be substituted.

FRUIT EGGNOG

1 Egg
2 T. Fruit Juice
2 T. Sugar
¼ C. Chopped Ice
¼ C. Water

Beat yolk of eggs until thick and lemon colored. Add sugar, and beat again. Beat white of egg to a stiff froth, mix with the yolk and sugar. Add water, then fruit juice. Serve in a glass.

JUNKET

2 C. Sweet Milk
½ a Junket Tablet
3 T. Sugar
Or 2 t. Fairchild's Essence of Pepsin
A few grains of salt
1 t. cold water.

Heat milk until lukewarm, add sugar, salt, flavoring and tablet

dissolved in cold water. Pour quickly into small molds; let stand in a warm place until set, then put in a cold place to chill. Remove from molds and serve with or without sugar and cream. If in a hurry use double the amount of tablet. Sugar may be omitted if desired.

BOTTLED BEEF JUICE

½ lb. Beef from Round

Remove fat, cut meat in small pieces and put in a glass jar, cover and proceed as for Bottled Beef Tea. Strain out juice and press meat. The liquid should be a clear red. Add a little salt and serve. One half lb. will make 3 to 4 T. juice.

To make beef tea dilute with warm water.

SCRAPED BEEF BALLS

Wipe a small piece of steak cut from top of round, cut in one quarter inch strips. Lay strips on board and scrape separately, using silver spoon, with grain of meat, first one side then on the other, to remove soft part of meat, leaving connective tissue. Form into small balls handling as little as possible. Heat omelet pan, sprinkle with salt, shake constantly while adding balls and continue shaking until the surface of ball is seared. Arrange on buttered toast and garnish with parsley.

LAMB CHOPS WITH POTATO BALLS

Scrape bone of rib chops clean nearly to lean meat. Par broil, turning often while cooking. Serve with potato balls.

POTATO BALLS: Cut balls, boil in salted water until tender, drain and coat with mixture of melted butter and finely chopped parsley.

BRAN MUFFINS

½ Cup Flour
½ t. soda.
¼ t. salt.
1 Cup Bran
½ Cup Milk
2½ T. Molasses
1 Egg

Mix and sift flour, soda and salt. Add bran, molasses, and milk; then egg well beaten. Bake in hot buttered gem pans.

STEAMED RICE WITH BAKED BANANA

Bake banana until skin is black. Remove from skin, squeeze lemon juice over it. Serve as garnish for mold of steamed rice.

SPANISH CREAM

½ t. Getlatine.
1 T. Cold Water
½ C. Milk
1 Egg
Few Drops of Vanilla
1 T. Sugar

Soak gelatine in water 2 minutes. Make custard of milk, yolk of egg and sugar. when thickened add gelatine. Add white of egg beaten stiff and flavoring. Turn into mold wet with cold water, chill, unmold and serve with sugar and cream.

CREAM SOUPS

Use cream for milk and thicken with the yolks of eggs. Use 2 yolks to 1 cup of liquid. Add any vegetable or fruit pulp.

ORANGE MINT CUP

Remove pulp from sour orange. Sprinkle with three-quarters tablespoonful powdered sugar and add one-half tablespoonful finely chopped mint and 2 teaspoonfuls lemon juice. Chill thoroughly. Serve in cocktail glass and garnish with sprig of mint.

MILK SHERBET

2 Cups Milk
½ cup lemon juice.
¼ Cup Sugar

Add lemon juice to sugar, pour gradually into milk. Freeze at once. Cream may be substituted in part for milk.

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